

AMERICAN GAS ASSOCIATION MONTHLY

Plumbers Not Willing Gas Companies Stop Merchandising
R. W. FORDYCE

Manufacturers Start
Move for National
Advertising

A. G. A. Moves
To Avert Tax on
Gas Consumers

Most Modern
Skelp Mill Made
Possible With Gas
L. A. DEALEY

Why the Gas
Industry Is Assured
Continued Growth
E. W. GALLAGHER

Future Possibilities of Gas Utilization in Industrial
Heating Processes
EUGENE D. MILENTZ



March 1932

Rate List No. 10—Soon Available

The A. G. A. Rate List No. 10 will be available about March 15. This publication contains the following information:

1. Rates for all classes of gas service in effect on January 1, 1932, in practically every community in the United States and its Possession, Canada and Newfoundland.
2. Complete list of gas companies with names of communities supplied by each company.
3. Alphabetical listing by states of all communities served with gas and kind of gas supplied (manufactured, natural or liquefied petroleum gas).
4. A tabulation showing all communities in which therm rates are now in effect and the names of companies serving such communities.

Rate List No. 10 contains over 400 pages of accurate and complete information relative to gas rates throughout the country.

Price per copy: To members, \$5.00; to non-members, \$8.50. One copy of the Rate List will be sent free to accredited delegates of member companies upon request. Address orders to:

American Gas Association • 420 Lexington Ave., • New York, N.Y.

AMERICAN GAS ASSOCIATION MONTHLY

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CAPACITY OF PLANT IN NEW YORK IS DOUBLED

THE capacity of the Hunts Point Plant of the Consolidated Gas Company of New York was doubled on Wednesday, January 20, when a new 30,000,000 cu.-ft. water gas plant was

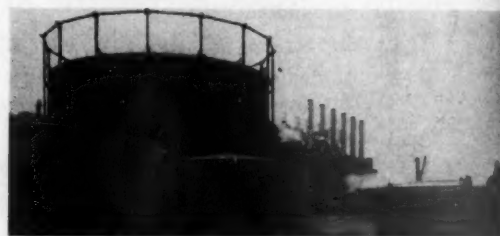


George B. Cortelyou, president of the Consolidated Gas Company of New York, presses the electric button to place the new Water Gas Unit in operation. William Cullen Morris, vice-president, is in the center, and John A. Garver, trustee of the Company, is at the left

Company in starting new units from the fires of the old ones was carried out in the case of the new plant. This custom dates back to 1848, when the company's second gas plant at 21st Street was



Showing the scrubbers, generator house and exhaustor house at the new Water Gas Plant, Hunts Point Station



Air view of the new Water Gas Plant at the Hunts Point Station

placed in operation by George B. Cortelyou, president.

Before this time, the Hunts Point Plant was devoted exclusively to the manufacture of coke-oven gas. The first two batteries of thirty-seven coke ovens each were started in November, 1926, and an additional battery of thirty-seven ovens was placed in operation in January, 1931.

With the completion of the new water gas plant, the daily capacity of the

Hunts Point Plant will be approximately 60,000,000 cu.ft.

The traditional practice of the

started with live coals transported from the original plant at Canal Street.

The new water gas unit is made up of a generator house equipped with six of the latest type water gas sets, each with a daily capacity of 5,000,000 cu.ft., and the other necessary apparatus and equipment.

The new water gas plant was constructed and installed by the Bartlett Hayward Company of Baltimore, Md.



The generator house of the new Water Gas Unit at the Hunts Point Station of the Consolidated Gas Company of New York

AMERICAN GAS ASSOCIATION MONTHLY

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Determination of Pressure Drop Through Gas Fittings and Controls on Gas Appliances

IN order to determine the correct size of gas fittings¹ and controls² for use on gas appliances, it is necessary to know their capacity to pass gas, or the drop in pressure through them at various gas rates. Controls which are too small will either pass an inadequate amount of gas or the drop in pressure will be so great that the pressure at the burner orifice will be insufficient to inject the volume of primary air necessary for complete combustion. Fittings and controls which are larger than necessary will, unless they are much too large, permit satisfactory performance but their cost will be high and therefore the price of the appliance to the customer will be excessive. It is important, therefore, to select proper size fittings and controls for gas appliances in order that proper performance will be secured and at the same time keep the price to the consumer as low as possible.

¹ Gas pipe, elbows, nipples, reducing couplings, etc., are referred to as fittings.

² Gas cocks, pressure regulators, hand-operated valves, electric valves, diaphragm valves, thermostats, etc., are referred to as controls.

By JOHN CORSIGLIA
Assistant Chief Engineer
and

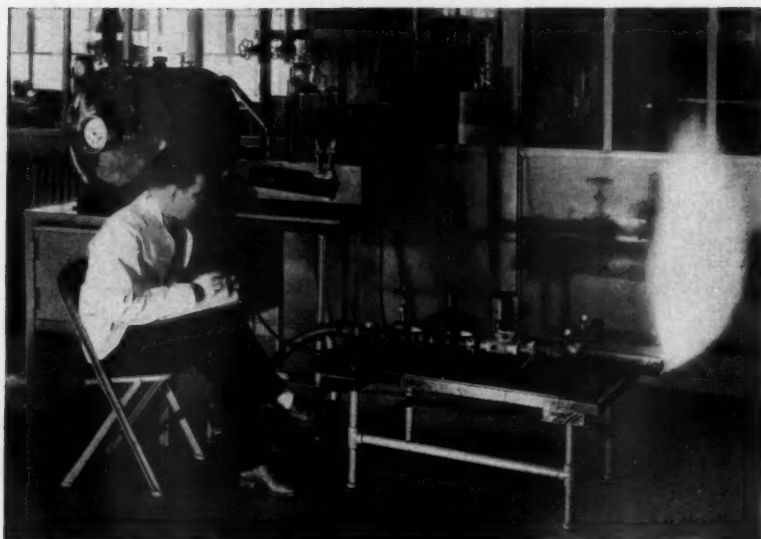
R. C. GREGG
Testing Engineer

American Gas Association Testing
Laboratory

Many manufacturers of controls specify in their literature the gas capacity of their products. There has been, however, no standard method of reporting such information, consequently it is frequently impossible to make a true comparison between the capacities of controls of various sizes or between the same size controls of different makes. For example, one manufacturer will list the capacity of his controls in terms of cubic feet of air with or without giving the pressure drop at that capacity; others will specify capacities using different specific gravity gases and at a still different drop in pressure. Also, the methods of test by which these data are obtained may vary so much that the results are not comparable. Conse-

quently, a standard method of test specifying a given pressure drop, the specific gravity of the gas to be used, and a uniform style of listing the results should prove beneficial to both the manufacturers and purchasers of fittings and controls.

Practically all of the Approval Requirements of the American Gas Association limit the allowable pressure drop through the gas controls and fittings used on an appliance. For example, the pressure drop through all controls and fittings on boilers and furnaces shall not be more than one inch of water column and for boilers with ratings above 3,000 sq.ft. of standard cast-iron column radiation not more than one and one-half inches of water column, while the maximum allowable pressure drop for space heater gas cocks is one-half inch water column when passing a 500 B.t.u. 0.6 gas at the input rating for the appliance specified by the manufacturer. The method of test for determining this pressure drop in each instance has been outlined only, the



Pressure drop test on fittings and controls of central heating gas appliance

details of test procedure having been left to the discretion of the Testing Laboratory. Realizing all of the factors mentioned above, the A. G. A. Subcommittee on Central Heating Gas Appliances requested the Laboratory to prepare a manual for use in determining pressure drop through gas controls and instructed its Cleveland Working Committee to assist in planning such a procedure.

As a result of numerous tests and an extended investigation, a test procedure which is designed to yield accurate and reproducible data when applied to various controls or groups of controls has been developed. The manual was prepared by the Laboratory with the assistance of the Cleveland Working Committee in co-operation with the United States Bureau of Standards. It has been approved by the Central Heating Gas Appliance Subcommittee and the A. G. A. Approval Requirements Committee and will be followed in all tests on fittings and controls conducted at the A. G. A. Testing Laboratory. The principles discussed and test procedure employed, however, are equally applicable to any A. G. A. Approval Requirements containing pressure drop tests and can be duplicated by any manufacturer having the necessary testing equipment. These principles are derived from known physical laws governing the flow of liquids and gases.

One of the fundamental physical laws which may be applied to pressure drop calculations can be stated as follows: The rate of flow of gas varies directly as the square root of the pressure drop and inversely as the square root of the specific gravity. This relation may be expressed in the form—

$$Q \text{ varies as } \sqrt{\frac{H}{d}}, \text{ where}$$

Q = Gas rate

H = Pressure difference, and

d = Specific gravity of dry gas referred to dry air as having a specific gravity of 1.00

Further, the quantity varies directly as the velocity and consequently the pressure drop varies directly as the square of the velocity or as the square of the quantity.

Care must be taken in making the proper application of these relations to the observed conditions. In applying them in practice to solve for an unknown quantity precaution must be exercised to prevent variation of physical factors, such as shape and size of orifices and pipes, in going from one set of conditions to another from introducing errors in the final results. Sudden changes in cross sectional area from one fitting to another or from one control to another often result in regions of lowered pressure. This is due to the "nozzling" effect which serves to constrict the flowing stream

to a diameter less than that of the confining walls. Furthermore, due account must be taken of changes in velocity head caused by changes in cross sectional area at points where pressures are taken.

Actual observations must be carefully made using instruments with a sensitivity and accuracy that fall well within permissible limits. In making pressure tappings the axis of the connection must be placed perpendicular to the direction of the air or gas flow. The inside end of the pressure pipe or tube used for the purpose should not project into the stream, nor should it on the other hand fall short of the walls confining the flowing air or gas. Either of these conditions would yield questionable results. Each pressure tapping should therefore be carefully checked. Other specific precautions and limitations are discussed later with reference to particular conditions.

Since the controls and fittings mentioned above are being considered for use on gas appliances the data on capacity and pressure drop reported should be in terms of a selected standard gas which would be representative of the fuel gases now in use. Air could be used for this purpose just as well, but there are a number of disadvantages to its use, namely: (1) It is not a fuel gas; (2) the humidity may vary considerably; (3) if, as is usually the case, it is highly compressed, accurate control of the pressure is difficult. Therefore, an arbitrary selection of a combustible gas was decided upon. All of the approval requirements committees have accepted as a standard a fuel gas rather than air and this gas is specified as 500 B.t.u. per cubic foot and 0.6 specific gravity. When results are reported on this basis they can easily be calculated in terms of any other heating value or specific gravity gas.

With the foregoing considerations in mind the standard method of test and procedure was developed and is given below.

METHOD OF TEST

Apparatus

A differential or slope gauge which will read directly to 0.005 inch water column shall be used. Gas range cocks may be used as shut-offs between the pressure tappings and the gauge. Rub-

ber tubing may be used between the shut-off and the gauge. There shall be a two-way valve or double shut-off on each end of the gauge so that both ends of it may be opened to the air, and a zero point reading determined. Either a wet or dry meter may be used. Meters should be checked or proved for accuracy.

Pressure Tappings

Two different types of pressure tappings may be made. It is strongly recommended, however, that type one be used inasmuch as the possibility of error is greatly reduced.

TYPE ONE

A short length of pipe or metal tubing of suitable size shall be soldered to the pipe where the pressure tapping is to be made. A drill can then be inserted into the short length of pipe or metal tubing and a hole drilled through the wall of the large pipe.

TYPE TWO

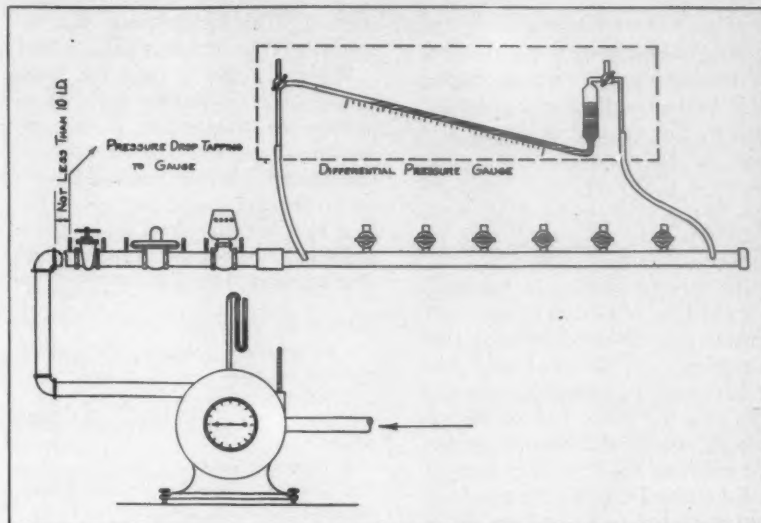
A hole $11/32$ inch in diameter shall be drilled into the pipe at the desired point for a pressure tapping. It shall be threaded to receive a short length of $1/8$ -inch pipe, care being taken that the end of the $1/8$ -inch pipe is exactly even with the inside of the larger pipe. A gas range cock may be connected to the $1/8$ -inch pipe as a convenient shut-off.

General Procedure

Fittings and controls are classified in three groups for the purpose of the methods of test outlined. They are (1) Primary controls which include gas pressure regulators, electric, plug, globe and gate valves, thermostatic controls and miscellaneous fittings, (2) Manifolds, and (3) Gas Cocks.

PRIMARY CONTROLS

A straight run of gas pipe of the same diameter as the inlet or outlet openings of the control and of a length equal to at least ten times the inside diameter shall be connected to both sides of the control being tested. It is best to make the tappings in the pipe at least four to five pipe diameters (I.D.) from each side of the control



Arrangement of apparatus for pressure drop test

before assembly. A number of these controls may be placed in series if they do not vary too greatly in size.

The inlet side of the control shall be connected to a meter of the proper capacity. Where gas is used, the outlet side shall be connected to a vent which will conduct the gas outside, or to a manifold from which the escaping gas is burned, but which is connected a sufficient distance from the controls to obviate any possibility of influencing the temperature of the controls, differential gauge, or meter. Where air is used for conducting the test it may be discharged into the room.

Hand-control valves shall be placed on the inlet and outlet connection to the assembly before the first and after the last pressure drop tappings respectively, so that the quantity passed and the pressure may be easily controlled.

All controls shall be in the full open position unless otherwise specified in the requirements before the pressure drop through them is determined.

In the case of electrically controlled valves, the valve shall be opened electrically and not manually.

The leads from a differential pressure gauge shall be connected to the pressure tappings on each side of the control being tested.

MANIFOLDS

With pressure tappings taken before the first and after the last cock, a

"negative" pressure drop will usually be observed (e.g., the pressure recorded at the far end of the manifold will be greater than the pressure at the inlet to the manifold). This is due to the fact that the velocity pressure at the inlet end of the manifold is converted into static pressure at the other end. It is necessary, therefore, to determine the magnitude of the velocity head at the inlet tapping and add to it the observed "negative" differential to obtain the pressure drop through the manifold. If the friction loss is greater than the "build-up," due to velocity head, the pressure at the far end of the manifold will be less than that at the inlet end.

The gas cocks supplied shall be attached to the manifold and fitted with spuds having orifices uniform in size which will limit the flow of air or gas to the capacity of the testing apparatus. The test is conducted with the gas cocks in the full open position. This simulates operating conditions and produces practically equal flow through each cock. If gas is used a wire screen is placed in front of the gas cocks and as far away from the manifold as will permit the burning of the gas on the side of the screen opposite the gas cocks. If this does not prove practical the gas from each cock may be discharged into one end of a length of 2- or 3-inch pipe and burned at the other end.

GAS COCKS

The gas cock shall be connected to the manifold and a pressure tapping made in the manifold at a point 90° from it. The tapping is located at a point in the manifold 4 to 5 pipe diameters (I.D.) up-stream from the cock. In case no manifold is furnished, a manifold of at least 1¼-inch diameter shall be used.

The pressure tapping in the manifold shall be connected to the high-pressure side of the differential pressure gauge, and the other tube shall be left open to atmospheric pressure.

In case the outlet end of the gas cock is tapped, the tapped portion, into which the spud would be screwed, shall be sawed off and the remaining portion of the outlet end reamed to remove burrs before testing for pressure drop. A gas cock having a tapped inlet connection shall be connected to the manifold with a close nipple.

The velocity head at the section of the manifold where the pressure tapping is taken is added to the observed pressure at this point and the velocity head at the discharge end of the cock subtracted from this total to obtain the pressure drop through the cock.

Where gas is used it should, if possible, be discharged into a vent. Otherwise the gas may be discharged into the air against a wire screen placed in front of the gas cock. The screen is placed as far away as will permit burning of the gas on the side of the screen opposite the gas cock. If this is not practical the gas may be discharged into one end of a length of 2- or 3-inch pipe and burned at the other end. Where air is used it may be discharged into the room.

General Precautions

If any doubt exists as to the correctness or constancy of the specific gravity of the gas available for the test and no apparatus for determining it is at hand, air should be used for the tests. It is probable that air will prove more suitable than gas in most instances where the test is not made in a completely equipped laboratory. In using air, however, sight must not be lost of the fact that correction for specific gravity must be made since this will depend on the degree of saturation under the temperature at which it is

metered. This for the reason that the specific gravity of 1.0 is for dry air.

When the gas is used the flame should be at a distance sufficient to prevent the temperature of the gas, pressure gauge, and controls from being affected. Where practicable with safety, the gas should be vented. Before each pressure drop reading, the gauge shall be opened to the air, and a zero reading recorded.

Data to be Recorded

1. Barometric pressure (corrected), inches of mercury.
2. Meter temperature, °F.
3. Meter pressure, inches of water column.
4. Time (seconds).
5. Metered volume for the time interval recorded.
6. Specific gravity of test gas whether dry or wet, and
7. Pressure drop (inches of water).

At least four readings should be taken at gas rates permitting as large a range of pressure drop as possible. A curve shall be plotted from the data obtained by plotting the pressure drop readings against the gas input (cu. ft./hr. or B.t.u./hr. of standard gas of 500 B.t.u. per cu.ft. and 0.6 specific gravity saturated at 60° F-30-inch hg.).

CALCULATION OF RESULTS

Correction for Water Vapor

Air or gas may be used but where gas is used natural gas is to be preferred since its specific gravity is affected only slightly by the water vapor, and therefore no correction is needed for the moisture content of the test gas. If air is used or if a test gas is used the specific gravity of which is not approximately 0.62, the following correction should be made for the moisture content of the air or gas.

$$d_t = \frac{(P_t - e)}{P_t} d_s + \frac{e d_v}{P_t} \quad (1)$$

Where:

d_t = Corrected or actual specific gravity of test air or gas as metered

P_t = Total or absolute test air or gas pressure

e = Aqueous tension of water vapor at temperature air or gas is metered. If the air or gas is not saturated at the temperature recorded, it will be necessary to correct this value for the actual moisture content

d_s = Specific gravity of dry air or dry gas (referred to dry air as 1.0) and

d_v = 0.62 = Specific gravity of water vapor referred to dry air

Converting Test Air or Gas to Standard Gas

The gas rate is calculated as follows:
 t = Time for discharge of 1 cu.ft. of test air or gas in seconds.

$$\text{Rate} = \frac{3600}{t} \text{ Cu.ft. of test air or gas per hour as metered.}$$

The formula for converting this result to the rate of standard gas (0.60 sp.gr. and 500 B.t.u./cu.ft.) is derived as follows:

The quantity of gas discharged through an orifice is inversely proportional to the square root of its density.

Under the same conditions of pressure and temperature—

Quantity of air or gas No. 2 discharged

$$Q_2 = Q_1 \sqrt{\frac{d_1}{d_2}} \quad (2)$$

Q_2 = Quantity of air or gas No. 2 discharged

Q_1 = Quantity of air or gas No. 1 discharged

d_1 = Density of air or gas No. 1

d_2 = Density of air or gas No. 2

The density of a gas is directly proportional to its absolute pressure (P) and inversely proportional to its absolute temperature (T) ° F.

Therefore:

$$PV = WRT \quad (3)$$

For 1 cu.ft. $P = WRT$

$$W_1 = \frac{P_1}{RT_1}$$

$$W_2 = \frac{P_2}{RT_2}$$

$$\frac{W_1}{W_2} = \frac{P_1}{P_2} \times \frac{RT_2}{RT_1}$$

Since W_1 is proportional to d_1 and W_2 is proportional to d_2

$$\frac{d_1}{d_2} = \frac{P_1}{P_2} \times \frac{T_2}{T_1} \quad (4)$$

Substituting in equation (2)

$$Q_2 = Q_1 \sqrt{\frac{P_1 T_2}{P_2 T_1}} \quad (5)$$

For calculating the quantity of standard gas that would be discharged through a given control at the observed pressure drop:

$$Q_s = Q_t \sqrt{\frac{P_t T_s}{P_s T_t}} \times \sqrt{\frac{d_t}{d_s}}$$

$$Q_s = Q_t \sqrt{\frac{P_t T_s d_t}{P_s T_t d_s}}$$

$$Q_s = Q_t \sqrt{\frac{520 P_t d_t}{0.6 \times 30 \times T_t}}$$

$$Q_s = 5.375 Q_t \sqrt{\frac{P_t d_t}{T_t}} \quad (6)$$

Substituting the value of d_t from equation (1) in equation (6)

$$Q_s = 5.375 Q_t \sqrt{\frac{P_t}{T_t} \left(\frac{d_s (P_t - e)}{P_t} + \frac{e d_v}{P_t} \right)}$$

$$Q_s = 5.375 Q_t \sqrt{\frac{d_s (P_t - e) + e d_v}{T_t}} \quad (7)$$

Where:

 Q_s = Quantity of standard gas, cu.ft./hr., Q_t = Quantity of test air or gas metered, cu.ft./hr., d_s = Specific gravity of test air or gas as observed, e = Aqueous tension of water vapor in test air or gas at temperature metered, inches of mercury, d_v = 0.62 = Specific gravity of water vapor at 60° F. — 30" H_g referred to dry air,

$$621 \times \frac{29.30 + 0.8}{29.30 + 0.3} = 631 \text{ cu.ft./hr., and from equation (8)}$$

$$h_v = \frac{1.0335 \times 10^{-8} Q_s^2 R_t d_t}{D^4 (460 + t)}$$

$$= \frac{1.0335 \times 10^{-8} \times 631^2 \times 29.6 \times 0.65}{1.36^4 (460 + 72)} = 0.0435'' \text{ H}_2\text{O}$$

 P_t = Total absolute test air or gas pressure, inches of mercury, T_t = Temperature of test air or gas, ° F. absolute, d_t = Corrected specific gravity of test air or gas as metered whether dry or wet, and d_s = 0.6 = Sp.gr. of standard gas saturated at 60° — 30" H_g referred to dry air as 1.0.

Calculation of Pressure Drop Through a Manifold

The head producing velocity at the inlet pressure tapping in the manifold can be shown to be:

$$h_v = \frac{0.000010335 Q_s^2 P_t d_t}{D^4 (460 + t)}$$

or

$$h_v = \frac{1.0335 \times 10^{-8} Q_s^2 P_t d_t}{D^4 (460 + t)} \quad (8)$$

Where:

 h_v = Velocity head corresponding to the velocity of the test gas or air flowing by the inlet pressure tapping, inches of water, Q_t = Quantity of test gas or air flowing by inlet pressure tapping under the test conditions at that point, cu.ft./hr. P_t = Total or absolute pressure on test gas or air at inlet pressure tapping, inches of mercury, d_t = Corrected or actual specific gravity of test gas or air at inlet pressure tapping referred to dry air as 1.0, D = Inside diameter of pipe at inlet pressure tapping, inches, and t = Temperature of test gas or air in manifold, ° F.

The pressure drop through a manifold of uniform cross section under the test conditions will be:

$$h = h_v + h_s \quad (9)$$

Where:

 h = Pressure drop, inches of water, h_v = Velocity head as determined by equation (8), inches of water and h_s = Pressure drop (usually "negative") between inlet and outlet pressure tapings on manifold as observed, inches of water.

Test Data

Manifold, 1 1/4" with seven gas cocks (I.D. = 1.36")

Barometric pressure (corrected) 29.30" H_gMeter pressure.....0.80" H_g

Time per cu.ft.....5.8 Sec.

Meter temperature.....72° F.

Pressure at inlet tapping 4.1" H₂O = 0.3" H_g

Specific gravity of test gas.....0.65

Observed pressure drop....-0.028" H₂O

Test gas rate as metered....621.0 cu.ft./hr.

Gas rate under conditions at inlet tapping is,

Example of Calculations of Total Pressure Drop Through a Set of Controls

With the test gas used (0.65 sp.gr.) the correction for specific gravity due to water vapor is not significant and is therefore omitted in this example. The assembly under consideration is provided with seven gas cocks.

$$Q_t = \frac{3600}{t} = \frac{3600}{5.8} = 621 \text{ cu.ft./hr.}$$

(as metered)

From equation (6)

$$Q_s = 5.375 Q_t \sqrt{\frac{P_t d_t}{T_t}}$$

$$= 5.375 \times 621 \sqrt{\frac{(29.30 + 0.8) 0.65}{460 + 72}}$$

$$= 639 \text{ cu.ft./hr.}$$

From equation (9)

$$h = h_v + h_s$$

$$= 0.0435'' + (-0.028) = 0.0155'' \text{ H}_2\text{O}$$

Control	Time Sec./Cu.ft.	Test Gas Rate Cu.ft./Hr.	Standard Gas Rate Cu.ft./Hr.	Pressure Drop Inches H ₂ O
Regulator	5.8	621.0	639.0	0.402
Globe valve	5.8	621.0	639.0	0.334
Diaphragm valve	5.8	621.0	639.0	0.142
Gas cock (one)	40.6	88.7	91.3	0.075
Manifold	5.8	621.0	639.0	0.016
Total pressure drop				0.969

Calculation of Pressure Drop Through a Cock

TEST DATA

Manifold used 1 1/2", I.D. = 1.625"

3/8" cock, nipple and orifice fitting (threaded inlet end)

Diameter of orifice fitting at plane of discharge to atmosphere 7/16"

Barometric pressure (corrected) 29.30" H_gMeter pressure.....5.5" H₂O = 0.40" H_g

Time per cu.ft.....27.2 Sec.

Meter temperature.....77° F.

Specific gravity.....0.67

Pressure at tapping in manifold 0.618" H₂O

Test gas rate as metered....133.3 cu.ft./hr.

Gas rate under conditions at pressure tapping is,

$$133.3 \times \frac{(29.30 + 0.40)}{(29.30 + 0.05)} = 135.0 \text{ cu.ft./hr., and from equation (8)}$$

$$h_v = \frac{1.0335 \times 10^{-8} \times 135.0^2 \times 29.35 \times 0.67}{1.625^4 (460 + 77)}$$

= 0.00099 or 0.001" H₂O for the purpose of this problem and the total pressure is 0.618 + 0.001 = 0.619

Gas rate under conditions at outlet of cock is,

$$133.3 \frac{(29.30 + 0.40)}{(29.30)} = 135.2 \text{ cu.ft./hr.}$$

The static pressure at the outlet end of the cock is atmospheric or h_s is zero and the total pressure is therefore

$$h_v = \frac{1.0335 \times 10^{-8} \times 135.2^2 \times 29.30 \times 0.67}{0.4375^4 \times (460 + 77)}$$

$$= 0.1885'' \text{ H}_2\text{O}$$

The pressure drop through the cock is 0.619 — 0.1885 = 0.431" H₂O

SUMMARY

1. Detailed procedure for determining the gas capacity of gas pipe fittings and controls such as gas cocks, pressure regulators, valves, and thermostats at various pressure drops has been given.

2. Examples of calculations of results illustrating the correction for water vapor, converting test air or gas to standard gas, pressure drop through a manifold, and a gas cock as well as total pressure drop through a set of controls have been included.

3. For standardization of data on pressure drop results are reported in terms of a selected standard gas of 500 B.t.u. 0.6 sp.gr.

Trade Relations from the Executive's Viewpoint*

THE aggressive sales activities of our sales departments,

backed up by the sound and forward-looking policies of our managements have developed the gas industry to its present position. These aggressive sales activities must continue if our industry is to continue to grow and develop. However, the future sales program must be developed in harmony with certain fundamental principles of trade relationship that are rapidly becoming nationally recognized.

These broad national principles provide a background for the local utility to unite with the other interested elements of the industry in a sales program, where, by an orderly and coordinated effort, the story of the great benefits of gas service to the domestic user may be told to the maximum number of homes. The use of gas in the home has always been the backbone of our business, and the domestic field is still our greatest potential market.

Executives in the gas business have been talking about the advantages and the desirability of a sound trade-relations policy for twenty years or more. A few years ago, the subject received national recognition as we found ourselves subjected to a nation-wide attack on account of our merchandising policies. Finding ourselves suddenly on the defensive, for a time, our attitude could only be protective. Any curtailment of the merchandising of gas appliances would be a shaft plunged at the very vitals of our business development progress.

Thanks to level-headed thinking and intelligent leadership on both sides, it was decided to have our representatives sit down with representa-

By MORSE DELLPLAIN
Northern Indiana Public Service Co.,
Hammond, Indiana

tives of our natural trade allies and attempt to evolve a set of

fundamental principles to be used as a guide in building a sound utility sales and dealer cooperation program. A set of six fundamental principles resulted from these conferences.

Now a principle is not a law, nor a rule, nor a policy; it is simply a guide. These six fundamentals were stated as principles, so that each company could give special consideration to its own local conditions. It is their broadness that makes them so readily adaptable for local interpretation.

"All gas appliances offered for sale by all cooperating agencies shall bear the seal of approval of the American Gas Association Testing Laboratory."

Isn't it a constructive step forward to have the Master Plumbers Association and the National Retail Hardware Association pledge themselves to handle only laboratory approved equipment? Isn't it one of our big arguments that we merchandise because the dealers sell sub-standard equipment? Realizing that the A. G. A. seal of approval is primarily concerned with safety of operation, the fact that these associations are going to handle only approved gas appliances is surely a step forward.

"No appliance or merchandise not directly related to the use of gas shall be sold by gas utilities."

This is a concession we should be glad to make. A sale of cuckoo clocks on the theory that the cuckoo clock makes the kitchen more interesting to the housewife and, therefore, she will use more gas is somewhat far-fetched. It would be just as logical for the gas company to sell bath salts on the theory that with bath salts the housewife would take more baths and, therefore, use more gas-heated hot water.



Morse Dellplain

"In all merchandising activities, the resale mark-up of all gas appliances that have received reasonable customer acceptance shall be consistent with present-day merchandising practice. There shall be no premiums given with nor trade-in allowances made in connection with the sale of any such appliances unless all cooperating agencies are in a position to cooperate."

A very sound principle and worthy of analysis. It suggests that an appliance, the distribution of which has passed the pioneering stage, be merchandised at a merchandising profit. In other words, if the gas company sells it at all, it does so to set a quality standard at which dealers in that community can aim. And by the same token, it creates the opportunity for others to engage profitably in the gas appliance business.

The question of "trade-in" allowances is one that needs real thought. A trade-in allowance is one of two things. It is either a business inducer or it is an indirect way of cutting a list price, or it is both. It would be foolish to say it should be completely eliminated, so long as it has definite merchandising merit. The thing to do is to elim-

* Digest of Address delivered before the Mid-West Regional Gas Sales Conference at Chicago, Ill., Feb. 17, 1932.

inate the uneconomic practices that have been going with it and use it to build net profit into the sale of any particular appliance and not as a weapon for cut throat competition. The practice of trade-in allowances, both in and out of our industry has been very much overworked. Excessive trade-in allowances have wrecked many an automobile dealer. The problem from our viewpoint is not how much business we are getting away from our appliance-selling competitive dealers primarily through its use, but how many who would be trade allies we are keeping out of the picture. If a percentage or fixed trade-in allowances can be arrived at, mutually satisfactory to our local members of the trade associations who have endorsed these principles, then and only then will there be full encouragement extended for active sales effort on their part.

At this point, I should like to comment on the subject of salesmen's compensation. From the standpoint of sound dealer relations, the merchandise salesmen's compensation plan of the average gas company is subject to very definite criticism. Emphasis should be on the total number of standard units connected to the system, rather than on the number of units sold by the utility's merchandise department.

The measuring stick of the effectiveness of a utility sales department should be the increased load that its own efforts, plus that of the dealers, bring to the company, and conceding that it may be impractical to adjust compensatory schedules immediately to this end, the trend should be in the direction of taking the emphasis off the volume of merchandise sold at retail and placing it on the total number of standard units connected to the system.

"The presenting to the public of those appliances not having received reasonable customer acceptance shall be considered as promotional activities and not as merchandising activities."

We merchandise with one goal in view: the maintenance and development of our load. We believe that we are justifiably in the merchandising business for two reasons:

1. To establish and maintain a quality standard.

2. To pioneer new uses and applications for using our service.

I have already discussed briefly the maintenance of an appliance quality standard in our territories. The question of pioneering new uses for gas is another matter. It is fundamental in utility merchandising that the easiest and most profitable appliances to sell bring us the least load. The fact that an appliance brings a new domestic application for gas with it implies a selling cost far greater than the gross profit from the sale.

* * * *

It is very obvious that no dealer could absorb such an expense as pioneering a self-action water heater, nor could any utility sales department profitably do it, strictly as a merchandising operation.

These dealer associations thoroughly appreciate these facts, and they admit our right to consider such operations as promotional and not merchandising. The problem, therefore, is to distinguish between what is merchandising and what is promotional. This, again, is a matter for local definition. I can readily see how a gas range, in most instances, is a merchandising appliance, but in a community where gas service has recently been made available under highly competitive circumstances, its sale is entirely promotional. One utility merchandiser, when asked what was the border line between merchandise as such, and promotional equipment, replied that the appliance was promotional until you saw it on display in a department store. This was his way of saying that a department store never can afford to handle anything until a demand has already been created for it. After all, it is all a case of what the local saturation is and no one is in a better position to know what that saturation is than the local utility sales executive.

"Coordinated advertising of approved appliances should be developed by gas utility companies and local dealers and the gas company should give all reasonable assistance possible to the dealer in advertising, displays and sales assistance."

In that most utilities are doing this now wherever there is any organized

form of cooperation, this point requires no amplification.

"The deferred payment feature of our merchandising activities shall be on an economically sound basis."

Let us examine this in detail. First, there are economic limits in retail time payment terms from a strictly merchandising viewpoint. We, because of the load, in addition to the merchandising profit, can from a utility viewpoint afford to stretch the economic limits beyond those that are sound for the private merchant. In doing so, however, we are using our utility position to create a merchandising condition, with which it is bad business for the dealer to compete. To my mind, there is only one way to be fair in this. If we feel that to secure a wider distribution of a certain appliance longer terms are necessary than the dealer can afford to offer, then we, in all fairness, should make those same terms available to the dealer by agreeing to discount his paper.

The A. G. A. principles of merchandising are offered as a general suggestion for localized adaptation and are a prelude, as it were, to what I believe to be a far more important side of happy trade relations. At first, our attitude was purely protective. Our mental attitude has now passed that phase, and I think most of us are taking the constructive viewpoint, which is that we should further our dealer relations because it is good business.

It seems fundamental to me that the more people that are engaged profitably in any business, the more aggressively will that business be developed. Also, so long as there is a more profitable opportunity for capital in the business, there will be a higher type of personnel attracted to it.

We, in the gas business, are vitally interested in the sale of gas, and this is possible only through the sale of gas-using equipment. It is, therefore, obviously good business for us to lend our efforts toward making the gas appliance sales business profitable for anybody with capital and ability who can be induced to go into it. It is a common complaint that dealers aren't merchandisers. If that is true, I can only say that they never will be until the business is made more profitable either for them to afford to be more

aggressive, or to induce men who are merchandisers into the dealer ranks. Let us ask this hypothetical question. If dealers were aggressive, if they were good merchandisers and conducting their gas appliance sales according to the A. G. A. principles we have just discussed, would they, or would they not be helping us to build our load?

The answer is obviously *yes*. If that is the case, why is not it good business to frame cooperative policies and put into practice plans that are constructively promotional to this end? In other words, why not help the dealer to make more money on the sale of gas appliances than he can make on other fuel-using equipment?

As a staunch believer in the value of gas appliance merchandising from a utility viewpoint, I am just as convinced as I ever was that the gas company should continue to merchandise, but in such a way that our trade allies can thrive and not be stifled by our efforts.

With one or two outstanding exceptions, the dealer, generally speaking, has shown no evidence that he has the ability or desire to do the load building job that we have done or are doing. At the same time, we must realize the great advantage to us that would accrue if he could be built up and encouraged to do a similar job. Whether he ever will be able to do it is problematical. However, we have everything to gain and nothing to lose by so framing our merchandising policies and arranging our plans to encourage him to do so. The final answer is not one of so-called ethics but of economics, and it is along these lines that our trade relations must be developed.

In the final analysis, our business is more than a gas utility selling a service to our customers, and with a sales department selling certain manufacturers' products to foster the use of that service. Like every other industry, our industry includes every branch that has a potential profit in successful growth. Coordination of ideas, synchronization of effort all along the line are ideals that mean added strength to every branch of our industry, and when all is said and done, isn't that what we have in mind when we talk of trade relations?

Broadly speaking, any individual or group of individuals who benefit from the use of its service, while not directly in the service end of that industry are an important factor in its existence, and certainly any individual or group of individuals who are profitably engaged in it are integrally in the gas business whether they be the manufacturers who make and distribute gas-burning equipment, jobbers, retailers, or employees of these jobbers and retailers.

The manufacturers of quality equipment have an important place in this picture, and any utility policy that restricts opportunities for all manufacturers of quality equipment in any particular field is restrictive as far as the better interests of the utility are concerned. Unfortunately, such restric-

tive conditions do exist. For example, the utility, may, by limiting its efforts to the products of one or two manufacturers, throw an undue proportion of the total business available to those particular manufacturers, and at the expense of those other manufacturers who are both willing and able to do a job, provided they had the same advantage as the two selected by the utility.

The broadening of the field will also broaden the scope of the manufacturers advertising and through the medium of trade magazines published primarily for allied trades, bring the story of gas service and the possibilities for the sale of gas equipment to these trade bodies. I commend this thought to both manufacturers and utilities.

Germany is World's Third Largest User of Gas

PRODUCTION and consumption of gas in Germany ranks that country third among the world's gas producers, after the United States and England, but fourth in respect to per capita production, according to Trade Commissioner W. T. Daugherty, Berlin, in a report to the United States Department of Commerce.

Despite competition by electric lighting and coal firing, German gas production for light and heat has increased to quantities in excess of prewar days, the report states. Production by the approximately 1,100 public gas plants was 3.83 billion cubic meters in 1929, as compared with 3.63 billions in 1928, and 2.81 billions in 1913. Out of the 3.63 billion production in 1928, 2.48 billion cubic meters, or 68 per cent, was served by 94 plants in 89 German cities numbering more than 50,000 in population.

The number of accounts consuming gas in cities reported in 1928 was estimated at 4,233,341, or 227 per mil of population, an increase over 1927, when it was 224 per mil, the report stated.

Consumption in given cities ranged between a maximum of 214 cubic meters per capita in Barmen to a minimum of 75 in Magdeburg. It

was 148 in Berlin, the national capital, with a population of more than 4,000,000. Maximum consumption figures appear in cities with long-distance gas transmission service, as Barmen, Remscheid, Wald and Solingen.

Economical operation of the gas plants has made conspicuous progress in recent years. Substitution of the vertical chamber furnaces for the former horizontal retort furnace has increased the capacity charge from a minimum of 140 kilos of coal in the old to a maximum of 10,000 kilos in the new furnace. Labor saving thereby has advanced so that two or three workmen can operate gas production from 100,000 kilos of coal daily, against 30 formerly. Furthermore, the gas yield per ton coal has increased with remarkable suddenness; average yield in gas plants in large and medium cities jumped from 438 cubic meters per ton coal in 1927 to 471 cubic meters in 1928. Compared with prewar figures, however, the heat value of gas has been reduced from an average of 5,200 calories to 4,000-4,300, effected by addition now of blue water gas in contrast to generator gas and blue gas added directly after the war. Gas plants are steadily concentrating, mainly by absorption of small units into the larger enterprises.

Why the Gas Industry Is Assured Continued Growth



addition to these divergences, their difference must be

met in technical and engineering ways. Over all, of course, is the greater flexibility of the smaller unit which is thus fortified and energized by definite knowledge and adaptability to social needs and the best methods of serving them.

First, a word as to the economic background of our industry: There is no contribution which can be made by myself to the knowledge which you already have on that subject. I think it is the part of good judgment not to be carried away by varied opinion and immature judgment on the question of economic changes. Our obligation to the public which we serve, to our companies, and to ourselves, requires, I believe, the maximum application of our energy and thought to each problem as it arises and to each day as it dawns. Our present situation will not be helped by looking backwards or by speculating on matters and conditions beyond our control. Should we not, therefore, confine our labors and a large portion of our worries to the immediate problems before us and remember that the future is a succession of todays? By this I do not mean that we should not plan for the future. That is, of course, necessary. What I do mean is that we must not be tricked into dreaming of a completed and beautiful structure and be misled into neglecting the foundation which must be laid today.

Our company problems, our personal problems, and our regional problems are best known to each of us respectively. I would not, of course, have the temerity to tell you New Englanders how to run your business or your association when the evidence is so clear and compelling that you know

By R. W. GALLAGHER

President, American Gas Association

excellently well what that is yourselves, but over

the entire gas industry of this country and Canada there are very pressing problems of a general nature which affect us all alike.

The first of these, or at least it is the one most talked of today, is that of continued and increased presentation to the public of the gas idea. A phase of this, and perhaps the whole of it except in its mechanical execution, is the policy of a gas company to interpret the gas idea in every home, helpfully, practically and economically in ways that will best bring out the wonderful advance made by engineers in the science of heating.

It may be that I am wrong in this, but I think the American public nowadays more than at any time is ready to be told what is meant by the term "modern gas service." I feel that the basic idea is already firmly planted in the public's mind that gas is heat, and of the advantages of cleanliness and convenience as compared with solid fuels. I believe it is becoming necessary that the gas idea be broken down and particularized in terms of definite meaning as applied to family, commercial and industrial uses.

The gas idea means nothing; a full and complete knowledge and absolute acceptance of its clean and automatic convenience also means nothing; all that we have and that the public is willing and even anxious to grant us means nothing, unless we make it known to the particular family, or business, or industry, just how it can realize the advantages of modern heat, which, of course, is gas.

I am pleading, therefore, as a groundwork, what many of us believe must be the means of continuing that progress which we have already no nota-

PERHAPS at no time in many years has the quality of the New England character as a national anchor in times of storm been so clearly demonstrated nor so well deserving of public and private admiration. I think the New England Gas Association has much to teach the rest of us. More and more, it seems to me, the importance of a regional organization is becoming apparent. The momentum of the industry as a whole is, of course, vitally dependent upon organization of the industry. Without this momentum and completely organized effort, we as individual companies or units could not expect the progress that we are entitled to. But the organization of an industry as a whole, particularly one that covers a continent, also implies the organization of its parts, for in that way it is possible to relate organized effort more effectively to particular and sectional conditions, and these conditions are of many and different sorts.

We know, for example, that cities and towns in a single system show distinctive population temperaments. In

Digest of address before the New England Gas Association, Boston, Mass., February 3, 1932.

bly achieved. Gas values must be interpreted to individuals, whether a company, industry, or family, in terms that it can understand. The same is true of all conditions and problems affecting the gas industry itself, which are of such a nature that the public must know about them for its good and our own. These, too, must be told in particularized and often localized terms of community understanding.

I am aware that such a plan means the breaking down of our work as an industry into many parts, but I am convinced that there is no one single formula which will solve all gas company problems, all community and utility problems, or all family heating problems, with one magnificent flourish.

The situation, as many of us view it, is one that requires careful study and effort on the part of everybody concerned. If this is true, and I believe it is, the value and the benefit of regional and sectional organization become transformed into a necessity, that is, a desirability becomes a necessity.

As stated before, the proper handling of the gas industry's problems in different sections of the country requires sectional organizations working in harmony with company organizations, and varying conditions which have to be met in the different sections make coordination under one central association all the more necessary if the industry is to meet the competitive conditions, which we all face, with a united front. It just naturally follows that if the problems of different companies and local organizations vary in different parts of the country, there must be coordination of the efforts to properly solve the problems if the industry is to progress.

If organization of the parts is necessary, as we have seen it to be, the organization of the parts into an effective and impelling whole stands out as part of the picture of stability and progress which the American gas industry today presents.

In these circumstances I am glad to be afforded the opportunity to discuss briefly with you some of the reasons why in my opinion the gas industry of America as a whole, and organized as

a whole is assured of continued growth and of increasing importance in the public service.

In a long history we have repeatedly demonstrated our adaptability to successive changes. Through them all, and in spite of some of them, the gas industry records progress. In this century and especially since the close of the Great War, we have recognized new fields for the use of our product in almost every industrial operation using heat; we have developed a substantial and rapidly increasing house heating demand; we have done remarkably well under all the circumstances with gas refrigeration. In mentioning these comparatively new uses, I do not overlook the much greater advances that have come from our aggressive marketing of appliances for use in cooking, water heating and space heating, and some advances in laundry work and incineration.

In other words, the gas industry has kept abreast of the times and in many respects has kept ahead. This is an enviable record for an industry which has existed for many years and which has acquired a balance of conservatism.

The industries that will lead in the near future and probably in the long future are those which resolutely pursue research both in the fundamentals of their existence and in the practical attainment of their possibilities. This is so clearly recognized that the financiers make the spirit of research a factor in their appraisal of future security values. The executive officers of a fixed investment trust recently organized, when selecting their portfolio of industrial securities, provided as the first requisite that companies appearing on its list must have adequate research programs, either individually or through associations.

The gas industry began comprehensive and carefully planned research programs long before the economists grasped the essentiality of such procedure. Our industrial gas research is now in its sixth year and upon its execution is concentrated our best thought. No matter what questions have arisen as to the relative importance of activities of the American Gas Association, our Executive Board has never ques-

tioned the necessity for industrial gas research and has resolutely maintained its program in both fair and foul weather. Some day the gas industry will have good cause to remember with gratitude the work of Mr. Rutledge and his associates on the Industrial Gas Research Committee.

It is a mistake, of course, to conceive research as something purely technical. Just as careful and exhaustive analyses have been made in respect to problems of markets, sales management, salesmanship, employee-dealer relations and allied subjects, all of which give evidence for my thesis that the gas industry is going to continue to grow and develop partly because we persistently and thoroughly pursue policies of analysis of our present conditions and our future prospects.

Another fine example of coordinated effort lies in the establishment, the growth and success of the A. G. A. Laboratory which has in its testing and research programs been of exceptional service to the industry and to the public by bringing about the acceptance of appliances complying with nationally recognized standards of safety and operation thereby maintaining the industry's leadership in this line of endeavor.

This train of thought naturally leads one to the record made by the gas industry of America through the American Gas Association in establishing its activities upon a definite basis of operation. I suppose everyone in the industry knows that we began in 1926 the formation and execution of a Five-Year Program for Association Activities prepared by a committee of leading executives headed by Hon. George B. Cortelyou. To that program the industry has adhered and all of its proposed activities have been judged in its light. It has been a sheet anchor in good times and in bad times. Upon the expiration last year of the original program, a new plan for the next five-year period was prepared and adopted under the leadership of your Dana Barnum as chairman. In doing so it was clearly shown that no change was necessary in the foundations and only such modifications in the superstructure as were suggested by changes of

(Continued on page 131)

A. G. A. Moves To Avert Tax on Gas Consumers

CONFERENCES at American Gas Headquarters upon the proposal before the Committee on Ways and Means of the House of Representatives for a tax on consumers of gas, resulted in a statement presented to the Congressional Committee, through R. W. Gallagher, president, at a hearing in Washington, on February 2, 1932.

The statement, as submitted by Mr. Gallagher, which follows, was supplemented by statistical material, a portion of which sustained the argument, the remainder being asked for by the House Committee:

Mr. Chairman and Members of the Committee:

"I am here as the representative of the American Gas Association, which is an association of about 91 per cent of the gas companies operating in the United States.

"The serious problem which the committee faces is understood and appreciated by this association. At the same time we feel it desirable that the committee be advised of the pertinent facts concerning our industry before it takes any action on such a proposal as is now before it.

"The gas companies of the country distribute gas to about 7,800 communities. Some distribute manufactured gas, some natural gas, and some a combination of the two.

"The most recent reliable information that we have deals with the year 1930. At that time there were about 16,000,000 consumers. These consumers fell into two broad classes, residential consumers and industrial and commercial consumers. There were about 15,200,000 residential consumers, and about 832,000 industrial and commercial consumers at the end of 1930.

"Each residential consumer, gen-

erally speaking, represents a family, so that out of approximately 30,000,000 families in the country, we assume that there were 15,000,000 families using gas or approximately 50 per cent of the total number of families.

"The total revenue taken in by the gas companies in 1930 was approximately \$803,600,000. Of this, approximately \$568,000,000 represents revenues from residential customers, and \$235,600,000 revenue from industrial and commercial customers.

"The residential customers, as you may know, use gas in three principal ways, for cooking, for water heating, and for house heating. In the commercial and industrial field, gas is used for all purposes where heat is required, and is in competition with all other fuels. Even in residential use, gas is subject to competition with other fuels when it is used for house heating, and this is also true in considerable measure when it is used for water heating. On the other hand, gas for domestic cooking, which began long ago as a convenience and labor-saving device, has now developed into an economic necessity. The fact that a family cooks with gas does not indicate that it is any higher in the economic scale than a family that does not, but merely that it lives in a location where gas is available.

"At this point I would like to suggest that when Mr. Hagenah was talking, some member of the committee suggested that people using gas were in a different class from those not using gas; in other words, gas was not used except by people having a substantial income. The facts are that in our locality—and I take it our case is representative of other communities—there are 1,200,000 inhabitants and 300,000 customers on our lines. This indicates that in our community, generally speaking, four

A Cruel Tax

AMONG the revenue-raising proposals now before the House Ways and Means Committee is one that should be rejected with all possible speed. That is the plan for taxing customers of gas and electric utilities.

All the arguments that make a sales tax on bread or other necessities iniquitous apply also to this kind of a utilities tax. Gas for cooking is an absolute necessity of life in many parts of this country. To the families near the margin of want, every cent they must spend to cook food is a problem. Light is no less essential. To burden the small electric bill with a federal tax levy would be cruel and unjust.

This utility tax is not a proposal for collecting revenues from a business that has withstood the depression better than most of its fellows. In form and in the manner of collection it is quite different from the utilities tax that was considered by the last Ohio Legislature. It is a tax directly on families already paying well for services they cannot do without. It is a discriminatory tax, not adjusted to the principle of ability to pay, but designed to fall most heavily on the urban poor, who cannot cut wood to warm themselves or make candles for light.—*Cleveland Press*

people as a rule represent a family. I think, therefore, you can assume that gas is used universally in districts where gas is available—not by any one or more particular classes of people but by all classes.

"There was another point brought up during Mr. Hagenah's discussion this morning which I would like to touch on. That was as to the extent that a tax which might be imposed by the Government upon the use of electricity would affect the individual consumer. Figures were mentioned which represented the average amount of electricity sold and the average bill paid per consumer for a year. In that connection I would like to call your attention to the fact that, peculiar as it may seem, the man who pays the highest gas bill is not necessarily the well-to-do man. Most of the cities have a large percentage of apartment houses. People living in apartments, in so far as the gas industry is concerned, are the smallest consumers. For example,

in an apartment having 100 suites, the average consumer may use 1,000 feet of natural gas, or a somewhat larger amount of manufactured gas, a month, whereas the mechanic or day laborer who lives in a house and uses gas for cooking or winter heating has bills which run up to \$4 or \$5 a month in the summer, and in the winter, when he is using more gas for heating, his bill often goes to \$6, \$8, or \$12 a month. The man with the smallest gas bill, in other words the apartment hotel dweller, is not the poor man. The really poor man usually has a rather substantial gas bill. This is a fact that is well understood by all men in the gas business. It is hardly known or appreciated at all outside the gas business. It is a fact that this committee should know and should keep steadily in mind, for it means that a tax added to the gas bills on a percentage basis would bear most seriously on those people least able to pay it.

"An excise tax upon the use of gas, as applied to the use for industrial purposes, where the gas is in sharp competition with other fuels, would immediately have the effect of causing large numbers of such customers to turn to other fuels. This would, to that extent, simply defeat the purpose of the tax. Moreover, it would have an immediate and very bad effect upon the gas industry, and, through it, upon the other customers who are not in a position to turn to such other fuels.

"Generally speaking, the economic situation of a gas company is this: It designs and builds its plants and other facilities of such capacity as will take care of the requirements of its residential customers. These customers make heavy demands upon the facilities at certain times and light demands at other times. The facilities must be built large enough to take care of the heaviest demand. The gas companies have for years been engaged in an effort to utilize their plant facilities during such periods of light demand to supply gas to industries in competition with other fuels. By doing this, they

have realized additional earnings which have resulted in lower rates for residential consumers. In order to maintain the revenue required to carry their plants, the company would be obliged to retrace their steps and begin increasing residential rates for gas. They would have no option in the matter, since they are obliged to have enough revenue to carry plants and facilities large enough to meet the greatest demands of the residential customers, whether or not they have any industrial customers. The levying of such a tax, therefore, would ultimately result in adding to the burdens of those customers still taking gas, by increasing their rates.

"Those customers, of course, would, in addition, themselves have to pay the tax imposed upon them. The loss of industrial customers as a result of such a tax is not an imaginary condi-

"An excise tax upon the use of gas, as applied to the use for industrial purposes, where the gas is in sharp competition with other fuels, would immediately have the effect of causing large numbers of such customers to turn to other fuels. This would, to that extent, simply defeat the purpose of the tax. Moreover, it would have an immediate and very bad effect upon the gas industry, and, through it, upon the other customers who are not in a position to turn to such other fuels."

—R. W. Gallagher, President, American Gas Association

tion. The gas companies at the present time, even without such a tax, are having the greatest difficulty in holding their industrial customers in competition with other fuels, which are very low in price. So close is the margin that in many cases the slightest addition to the cost of gas to the customer would result in his turning to competitive fuels.

"In the Middle West these conditions are very aggravated. Fuel oils are selling as low as 2 cents a gallon, and coal is selling, as a manufacturer in Youngstown recently remarked to me, at prices named by the purchaser, and so the gas company is having a most difficult time in maintaining the small amount of industrial business, still left in its lines, which, as you may well imagine, due to present business conditions, is small compared to the amount in its lines in, say, 1929.

"As applied to a customer taking

gas for residential use, the effect of such a tax would depend largely upon what portion of his use is for house heating and water heating. A residential customer using gas not only for cooking, but also for heating, would in many cases be influenced in just the same way as the industrial customer—that is, with the present extremely low prices of other fuels, he would discontinue the use of gas for house heating and turn to other fuels for that purpose. In most cases he would continue to cook with gas. The difficulty in practically every home of finding a substitute for gas for cooking is not the case with gas for heating, where it is comparatively easy to convert over quickly from the use of gas to coal or some other fuel. The point is that the heating load is very easily affected by any changes in price. Just as in the case of gas for industrial use, gas

for house heating is in sharp competition with other fuels, with their present low prices, particularly coal, coke, and oil. In many communities, even without the additional cost which would be created by such a tax, the companies are having the greatest difficulty in holding and in some cases are actually losing

their house heating customers, this being due to the extremely low cost of other fuels and the keen competition resulting therefrom. To the extent that such a tax would bring this result, it would again defeat its own purpose, and it would in addition force upon the remaining customers the burden of furnishing the necessary revenue to enable the gas company to continue to give the service. It is not certain in many situations that the company as a practical matter could by any readjustment of its rates recover the full amount of the revenue which would be lost to it in this way.

"I may add a word here, while we are talking about residential consumers, about the conditions in the larger cities as compared with conditions in smaller communities, and whether this would be a tax upon a luxury or upon a necessity of life. We know that there are at this time some 85,000 peo-

ple out of work in Cleveland. I think that is a very conservative estimate. Every one of those people is nevertheless using gas for cooking. It is the only means that they have of preparing food. Many of them, under the stressed conditions now prevailing, are using gas for heating, because they have not the money to pay for solid fuels. If they were to buy solid fuels, the seller would require that they pay in advance, with the result that they turn to the only method of heating available, gas, and huddle around the kitchen stove to keep warm. It so happens they may use gas for 30 days before the meter is read; another 10 days pass before the bills are sent out; another 10 days elapse before a collector calls. The result is that these particular consumers are in arrears at least 50 days before the company has knowledge of their condition and then the collector finds that many of them are in dire straits without sufficient food and clothing and often finds even the children in a pitiful condition. In very many cases during the last year employees of our company have made personal contributions to help the most urgent cases reported through the company's collectors. In a great many cases it has been necessary for the charities of our communities through the community chest and from other available funds to help these unfortunate people. In many other cases where the customers always paid their bills promptly the gas company is carrying these accounts, hoping that work will be found by the man in arrears and that he will gradually reduce his indebtedness. Does this not indicate that gas is a necessity and not a luxury? Would you say that these people should be burdened with an additional tax contribution such as is here proposed?

"As applied to these residential customers who would not be driven to other fuels but would be forced to pay the tax, that is, the cooking customers, it would not be a general sales tax upon all the people; neither would it be a selective sales tax upon certain specified luxury articles such as has been imposed by the Federal Govern-

ment in the past. It would be a selective sales tax upon a limited group of these people, mostly wage earners, taxing them for the right to cook their meals, one of the necessities of life. At least one-half of the people, those who cook with other fuels, would be exempted from the tax.

"In other words, this would be the first time that the Federal Government has ever attempted to impose upon a limited class of people a sales tax upon a necessity of life. Before any such action is taken, it is not only the right, but the duty of the American Gas Association, to point out to this committee just what such action would amount to and the precedent that it would establish.

"The injustice caused by such a tax could be obviated only by levying a comparable tax upon all other fuels. This would be the only way the gas companies could maintain their present sales, and the only way in which

"It seems to me that it would be just as proper to tax bread as to tax the fuel which is necessary to bake it. Gas cannot certainly by any stretch of the imagination be classed as anything but a necessity of life."

—R. W. Gallagher, President, American Gas Association

the injustice to those using gas could be corrected. Unless this were done, the gas companies, in addition to the burden which would be placed upon them of collecting such a tax on behalf of the Federal Government, would find their business impaired, and the results of the efforts which they have been making for many years nullified.

"I do not see how the imposition of such a tariff could be considered consistent with what I understand to be the purposes of this committee. It is my understanding that the suggestions made to Congress by the Secretary of the Treasury had for their purpose the broadening of the base of taxation by reducing the income tax exemption and reaching more people, and the imposing of certain limited excise taxes. Even in those suggestions, considerable income tax exemptions were retained, and people of the smallest means were not intended to be reached, and the proposed excise taxes were to be only on specified luxury articles. The imposition of this

excise tax on the use of gas would burden the very class of people whom the Treasury Department intended to omit from Federal taxation, that is, people with small means. Worse than that, it would select out of that class a particular group, comprising only half of that class, while exempting the other half; and, in addition to the tax itself, these people would as a result of the tax soon find themselves subjected to an increase in the cost of the gas itself, for the reasons which I have stated.

"The committee should bear in mind that the users of gas are already indirectly paying taxes as such users, and that a part of the taxes they pay consists of a Federal tax. The taxes paid by the gas companies in 1930, and necessarily covered by them in their bills to their customers, were such that the average user of manufactured gas paid \$4.25, and the average user of natural gas \$3.96, and about one-quarter of these amounts were Federal taxes. Out of every dollar paid for gas by the gas consumers in 1930, 8.7 cents represented taxes.

"If I judge correctly the purposes of this committee, it is not their intention to tax the food necessities of life. Yet I find no way of distinguishing between the actual food which people must have for sustaining life, and the fuel which they must have to prepare such food. In fact, it seems to me that it would be just as proper to tax bread as to tax the fuel which is necessary to bake it. Gas cannot certainly with any stretch of the imagination be classed as anything but a necessity of life.

"Finally, I would like to call the committee's attention to the very pertinent fact, in connection with the proposed tax on electricity and gas, that the greater part of the consumers are using both commodities, and that the taxing of both would be a double burden on these consumers.

"I do not see how it would be justifiable to tax this particular group of people further for the support of the Federal Government until other people in the same economic group are subjected to similar taxes."

A. G. A. Supporting Harry C. Abell For U. S. Chamber of Commerce



H. C. Abell

HARRY C. ABELL, of New Orleans, Louisiana, has been enthusiastically endorsed by the American Gas Association for re-election to the directorate of the Chamber of Commerce of the

United States of America to represent the Natural Resources Production Department.

In addition to the whole-hearted approval of President R. W. Gallagher, and the Executive Board of the Association, Mr. Abell's candidacy for re-election also has received the endorsement of J. F. Owens, president of the National Electric Light Association; Guy A. Richardson, president of the American Electric Railway Association; Alfred H. Schoelkopf, president of the Empire State Gas and Electric Association, as well as that of James L. Stone, president of the Pacific Coast Gas Association. The following additional endorsements also have been received:

New Orleans Association of Commerce, New Orleans Board of Trade, New Orleans Cotton Exchange, National Tent and Awning Manufacturers Association, Peoria Association of Commerce, Carthage Chamber of Commerce, Baton Rouge Chamber of Commerce, Sacramento Chamber of Commerce, Jackson (Mich.) Chamber of Commerce, Delaware Chamber of Commerce, Alexandria Chamber of Commerce, Wheeling Chamber of Commerce, Chicago Association of Commerce, Seattle Chamber of Commerce, East St. Louis Chamber of Commerce, Chamber of Commerce of Monroe and West Monroe, Jackson (Miss.) Chamber of Commerce, Wichita Chamber of Commerce, Saginaw Chamber of Commerce, American Society of Certified Public Accountants, Chattanooga Chamber of Com-

merce, Argentine-American Chamber of Commerce, Pine Bluff Chamber of Commerce, Hartford Chamber of Commerce, Connecticut Chamber of Commerce, Inc., Boise Chamber of Commerce, Wichita Chamber of Commerce, Wilkes-Barre Wyoming Valley Chamber of Commerce, Knoxville Chamber of Commerce, Louisville Board of Trade, Memphis Chamber of Commerce, Memphis Cotton Exchange, Montclair Chamber of Commerce, Omaha Chamber of Commerce, Raleigh Chamber of Commerce, Dallas Chamber of Commerce, San Antonio Chamber of Commerce, National Association of Insurance Agents, National Board of Fire Underwriters, Pacific Coast Gas Association, Empire State Gas and Electric Association.

Mr. Abell has been a member of the board of directors of the United States Chamber of Commerce for the past two years, representing the Natural Resources Production Department. The exceptionally constructive manner in which he has fulfilled this position, together with his wide business experience and connections unquestionably merits his continuance as a Director of the Chamber. Mr. Abell is a convincing speaker. He is nationally-minded and his training and experience admirably qualifies him for the specialized duties of the Natural Resources Production Department.

In addition to two years' experience as a director, Mr. Abell has served as a national councillor in the Chamber. His business connections are many, and include among others: Vice-president of the Electric Bond & Share Company, vice-president and director of the Electric Power & Light Corporation, president of the National Power & Light Company, vice-president of the New Orleans Public Service, Inc., chairman of the board and director of the Memphis Power & Light Company, chairman of the board and director of the Memphis Street Railway Company, chairman of the board and director of the West Ten-

nessee Power & Light Company, and a director in many other companies.

For many years Mr. Abell has been an outstanding figure in the affairs of the American Gas Association. His efforts have contributed immeasurably toward the advancement of the gas industry. He has served continuously as a director of the Association since 1923, and as chairman and member of many of its important committees. In 1924 he was honored with the presidency of the Association and his administration was so successful that he was unanimously re-elected in 1925. He is now chairman of the Committee on Co-ordination of Scientific and Marketing Research, which has the duty of correlating all of the research conducted by the Association and involves an annual expenditure of approximately \$200,000. He is also chairman of the Committee on Century of Progress Exposition, American Gas Association.

Mr. Abell has occupied the following positions in the National Electric Light Association: Treasurer, member of the Constitution and By-Laws Committee, member of the Electrical Resources of the Nation Committee, member of the Finance Committee, member-at-large of the National Executive Committee, chairman of the Information Bureau's Organization Committee, and vice-chairman of the Public Relations National Sections.

Among a great many organization affiliations he is a member of the American Society of Mechanical Engineers, American Institute of Electrical Engineers, Engineering Institute of Canada, Engineers Club of New York, and the Bankers Club of New York.

Ordinarily, the election of the directors of the Chamber of Commerce of the United States is highly competitive. In order to assure Mr. Abell's re-election, it is essential that the endorsement of many of the national councillors representing organization

(Continued on page 131)

Future Possibilities of Gas Utilization in Industrial Heating Processes*

It seems to me that the future possibilities of gas or any commodity will be regulated by the technical development of that commodity and by the service it can render. By service, I mean both economic and social. This conference is an indication that sincere thought is being given to the subject of heat in industrial process work. I think it shows an enlightened viewpoint on the part of the Cleveland Engineering Society and the Case School of Applied Science to draw attention to heating processes through such activities as this conference. I am afraid we have all been too prone to think of progress in our factories as being tied up only with power; and if a certain factory was up to the minute in the use of power, that has generally been considered to be the last word. Now, I fully realize the fact that our factory operations have been very largely based on the introduction of power, which began years ago with the industrial revolution, and I think wonderful strides have been made particularly in recent years toward refining the application of power, but I do not think it is generally realized that in many factories and mills the use of heat, measured in B.t.u.'s, is many times the use of power when measured in the same terms. Therefore, any attention paid to improving heating processes has a likelihood of returning a greater dollar value than the same amount of attention paid to power.

An Analysis of Factory Trend

I believe the best way to judge the future is to analyze what has been developed and has endured in the past. Such an analysis as applied to

By EUGENE D. MILENER
Industrial Research Representative,
American Gas Association

factory processes indicates several things.

First, every trend has been toward a release of man's physical energy and the substitution of mechanical energy, and later a reduction in the amount of energy used per unit of product. This, together with an increase in the speed of production, decreases the unit cost of making goods.

Second, there has been a distinct trend toward supplying energy in the form of both heat and power from central outside sources, delivered automatically and ready to use automatically.

These two trends have been so distinct that to say that, over a period of years, they will not continue with equal or greater intensity is to say that our whole industrial system is ready to throw off much of the progress it has made in the last hundred years. I for one do not believe it will throw away that progress, so I therefore think it is safe to predict that the use of gas in factories will develop in the future by going along with the trends of the past and present, rather than by bucking these trends. That is a good thing because the bucking process, as you know, always involves a degree of uncertainty.

The increased use of gas—let us call it gas heat energy—will make our factories more efficient, cleaner, and will speed up the production of goods as well as help in the movement toward shorter working hours and consequently greater time for leisure and recreation, with their contributions toward a higher standard of living.

Gas heat energy will make the hard jobs easier in the future as it has made many hard jobs easier in the past. In the field of food products baking,

roasting, and other processes are carried on according to time schedules as accurately as a clock ticks. Gone are the days when loaves of bread leave the large bakeries, some underbaked and others overbaked. The same way with "hot dogs." Since gas has become the backbone of the smoking process, they all leave the packing house evenly smoked, with a good color and with a minimum amount of shrinkage.

Recent improvements in the application of radiant slabs in hotel broilers have reduced the time required to broil steaks and fish, and in addition, we are told by the leading chefs, sear the meat in a way that the juices are retained more than they have been heretofore. Gas will play a similar part in making other foods better in the future, the same as it has helped to raise the standards of so many foods in the past.

In the future gas will help to make available to us better dishes at lower prices so that we can more greatly enjoy eating these better prepared foods. The same is true of enamel ware used in cooking and storing the food. Work is now pretty well advanced in applying direct gas firing to high-grade tableware in continuous kilns. This is a radical departure from the old practice of periodic kilns with muffles and saggars that took days to heat up and days to cool down. Already one of the country's leading makers of high-grade tableware is beginning to adopt the processes of direct gas firing as one of the chief steps in their plans to radically reduce the selling price of their widely recognized quality ware.

Likewise with enamel. It will not be long before enameling porcelain on steel for table tops, stove parts, refrigerator parts and other uses will be done with direct gas heat without the use of muffles. This great step for-

* Address before Conference on Industrial Process Heating, Cleveland Engineering Society and Case School of Applied Science, Cleveland, Ohio, February 11, 1932.

ward is going to help reduce the price of all enameled ware.

Controlling and Using Atmospheres

These advances in the art of firing ceramics are part of the industrial gas research work sponsored by the gas industry through the American Gas Association. They, together with similar improvements in other industrial heating processes have resulted from a close study of the effects of atmospheres, at high temperatures, on products being heat processed. In the future atmospheres will be capitalized upon, not merely ignored or shied away from as has sometimes been the case in the past.

American Gas Association research has already clearly shown that convected heat of the type resulting from atmospheres of burning gas has many advantages over radiant heat, for instance in the core baking process. Great strides have been made toward baking cores in automatic convected heat gas ovens, especially in the automobile industry. Except in the very small shops I can see cores being baked in the future automatically in convected heat gas ovens much the same way that bread is being baked now even in some of the small bakeries.

Metallurgical Uses Being Developed

In the metallurgical fields the use of gas is destined to play increasingly important parts. Processes are now being developed that will produce bright anneals of not only brass, the toughest of all metals to bring through bright, but which will include many other metals extending all the way from German silver to sheet steel. When this problem of almost universally producing brightly annealed metals by continuous processes is finally licked, it is going to have a profound effect on many industries. It will be a new experience in many fields to have low cost bright finishes on some of the commoner metals.

I believe that the proper utilization of gas atmospheres will give metallurgists a complete control over that irritating problem in heat treating—decarburization. As a result of work that has been done, and other work that is now under way decarburization, after many years, is being conquered.

Scale-Free Steel From Gas Furnaces

Recent studies of atmospheres in gas furnaces have shed new light on how the age-old problem of scaling of steel can be handled during the heat treating processes. This applies to scaling at both the heat treating temperature range and at the higher temperatures used in forging. Within the last two years gas forging equipment has been brought out that heats billets practically scale free, under the most severe operating conditions. I hesitate to predict the extent to which the heat treating and forging industries will be affected when they once begin to demand that all steel come out of the furnaces scale free. Gas has pioneered the way in this great movement and will be the backbone of its extension throughout industry.

What of Refrigeration in the Future

The raising of temperatures has been the foundation stone on which civilization has been built. Man's conquest of all nature started when he learned how to rub two sticks together and get fire. That was his first controlled use of force, of energy. That controlled use of fire, and the things that make fire, increased with each succeeding age and the total amount of fuel now used for raising temperatures staggers the imagination. It has only been recently that man has learned how to reverse the process, and to lower temperatures, as well as to raise them, but Nature is quite stingy in this respect and exacts a heavy toll in energy for each spot of cold she relinquishes. We have all found that it is a harder job to reduce temperatures than to raise them. When motion is used to produce cold the laboriousness of the process is quite obvious. I do not think we are destined to always produce cold in this roundabout method. Cold in the future is going to be produced in a more direct manner than that. The transformation will be from gas heat energy direct to refrigeration, and this is a logical development, as the cooling process is simply a transformation of energy and gas heat energy is the cheapest form of energy that can be delivered regularly and automatically and used automatically.

In small sizes gas refrigeration is beginning to make refrigeration produced from motion sit up and take notice. Work is now being started that I predict will, within a reasonable time, make gas a real factor in refrigeration for the larger commercial sizes.

Drying Processes and Summer Air Conditioning

In the field of summer air conditioning, I predict that heat energy will play a prominent part in the future in conditioning the air in factories and commercial buildings as well as drying and cooling air for many industrial purposes. In the home I predict that gas heat energy will be predominant for year 'round air conditioning. These developments will take place along several lines. Gas operated refrigeration will be used the same as power refrigeration is now used in conditioning commercial buildings, but gas is going way ahead of power and will produce cooling and drying for air conditioning without the necessity of refrigeration. Through a combination of capillary attraction and gas heat energy we have been able to do some things that cannot ordinarily be done with power and refrigeration.

For instance, heat energy and capillary attraction will give air for industrial process work that is more nearly bone dry than that produced by other means. The combination of gas heat energy and capillary attraction, as the latter exists in Silica Gel, has been put to work by the A. G. A. to condition the entire air in dwellings in summer. No refrigeration is used. This completes the cycle of year 'round air conditioning using one source of energy. In the light of the great growth of gas house heating, or winter air conditioning, in all parts of the country I predict that this completion of the year 'round cycle will have far-reaching effects.

How Will We Burn Gas in the Future?

Recent research and development point to an interesting fact. The manner in which gas will be combusted in many industrial heating operations are due for radical revision.

The factory of the future will demand its heat in whatever form is most suitable for the operation at hand.

For instance, radiant heat will be demanded for certain processes and used to a far greater extent than it is now. The very real advantages, in many cases, of transferring heat by means of radiant rays will thus be taken advantage of. That radiation will come from the gas flame itself or from the burner. We will not have to depend for radiant heat upon reflection from beds of refractory that has been first heated up. The first commercial application of producing radiant heat by burning gas through a porous material which is part of the burner, has proven a success. Its extension to other processes will follow. Diffusion flame combustion in which the flame itself produces intense radiant rays has loomed upon the horizon as a result of industrial gas research and who can tell what effect it will have on our future methods of heating and of heat treating?

Complete premixing of gas and air under pressure and ready for distribution throughout a factory has always been practiced to a certain extent. The many advantages are obvious. The gas will burn when surrounded with any kind of an atmosphere, under pressure or not, and in fact will burn perfectly when the flame is submerged in water or in acid. Very recent simplification of the apparatus necessary for this process indicates that the cost will be reduced so that we will see gas being burned in many places and under the severest conditions where it has not heretofore been considered.

I want to say a word or two about diffusion flame combustion:

"Diffusion flame combustion" is the most newly discovered method of burning gas. It was first classified and studied by Burke and Schuman who were consultants for one of the organizations handling American Gas Association industrial gas research problems. Their work is reported in the proceedings of the American Chemical Society. The first practical applications have been in connection with A. G. A. forging research. There are two chief characteristics of diffusion flame combustion that have great potentialities in industrial process heating. The first is the great percentage of highly radiant heat generated in the flame itself entirely independent of the furnace or setting construction.

The other is the fact that pure carbon can be deposited on the surface of the work in any controlled quantities desired. The first is useful in high-temperature operations. I will mention only two here. In forging scaling is the most troublesome phenomena to contend with and it is caused by the steel being in air or in ordinary atmospheres of combustion at high temperatures. A. G. A. research has shown that steel billets can be "blanketed" in an inert gas and the radiant rays of diffusion combustion can be made to penetrate through this "blanket" and heat the billet entirely free from scale and in a very short time. With closer attention being paid to the quality of forgings and with press forging growing, industry is busy appraising the collateral advantages that will accrue to it when the production of scale-free forgings becomes commonplace.

In heating tanks of glass for instance, the radiation from diffusion flames will penetrate through the mass of glass and besides increasing the thermal efficiency it promises to give a speed and flexibility in heating that may materially reduce the great size of tanks considered necessary under present heating methods.

The other characteristic of "diffusion flame combustion" that is the ability, through its use, to deposit controlled amounts of carbon on the surface of articles being heated is useful in certain metallurgical operations such as normalizing sheets. This is just another example of the new concept of utilizing gas heat in industry, capitalizing the atmospheres of combustion

instead of regarding them as nuisances.

The future of gas in industrial heating is unpredictable. Every decade in the past has seen an increase in the rate of growth of industry's harnessing this service to its heating jobs. If that has been the case in the past, there are many more reasons why it should be so to an increasing extent in the future. Compared with the past, the average cost of using gas is less and the trend curve is downward. Compared with the past, the technique of burning gas will continue tremendously and will continue to increase. Compared with the past, gas furnaces, ovens and other equipment of the future will hardly be recognizable. And finally, compared with the past, industry is some day going to reach the point where the automatic delivery and use of industrial heat will be taken for granted the same as the automatic delivery and use of energy for light is now taken for granted. Those responsible for the planning of factory operations cannot afford to overlook these basic facts. The gas industry is not overlooking them. Even during this period of slackened business activity it is busily engaged in enlarging plant capacity, in drilling wells, and is gradually building up a nation-wide pipe line system capable of automatically transporting energy on a scale heretofore not dreamed of by the wildest *Jules Verne*. Those pipe lines will be used to a still greater extent in the future and all other industries, as well as the gas industry, will join in the benefits.

C. E. Paige Honored By International Gas Union

HIGH honor was paid to Clifford E. Paige, vice president of The Brooklyn Union Gas Company, and last past president of the American Gas Association, when he was unanimously elected a vice-president of the International Gas Union. The election took place at a meeting of the Council of the Union at Basle, Switzerland, on February 26 and was immediately cabled to Association



Headquarters by Mons. F. Escher, Dipl. Ing. D., of Zurich, president of the International Gas Union.

Mr. Paige attended the organization meeting of the International Gas Union in London in June, 1931. He also addressed the joint session of the International Gas Conference and the Institution of Gas Engineers of Great

Britain.

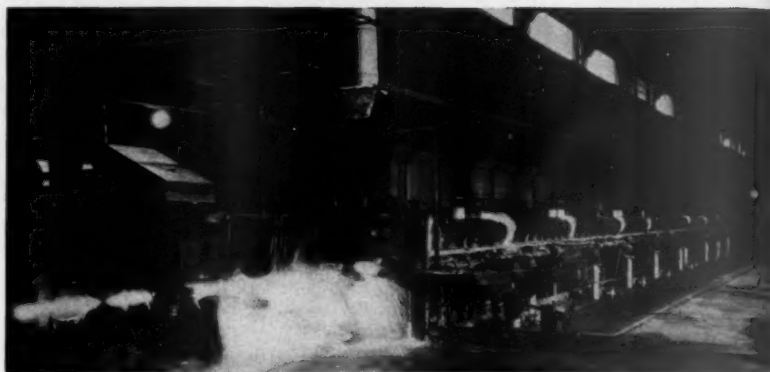
Most Modern Skelp Mill Made Possible With Gas

RECENTLY new processes for the manufacture and finishing of conduit have been developed. They are so much better than those formerly in use as to practically put that industry on another plane both as to economy in production and quality of product. Conduit is really pipe that is used in the protection of wiring and all pipe starts as skelp—flat steel in widths corresponding to the circumference of the finished conduit. Reduced to its simplest formula skelp is heated, formed into pipe and then seam welded.

The most modern plant of its kind, and embodying the improved processes mentioned, has recently been completed at Butler, Pa., by the Fretz-Moon Tube Co. The first improvement was in the skelp itself. Formerly random lengths were utilized causing waste in material and interruptions in the smooth operation of the mill. Now the mill is operated continuously and smoothly by using skelp in coils, ranging from 300 to 1,500 ft. in length and by welding one coil to the next. This skelp ranges from 1 9/32 in. to 9 1/4 in. in width and from .065 to .154 in. in thickness while the resulting conduit runs from 1/8 to 2 1/2 in. in diameter.

To maintain the continuity in mill operation during the welding, a device patterned after the take up loop in the motion picture machine is employed, the strip skelp being looped out onto a special runway to supply the furnace during the momentary pause for joining. After passing through the leveler the weld is so perfect as to be hardly discernible.

The seam welding furnace, that the skelp now passes through, is radically different from other pipe furnaces in that it is much smaller in cross section, different in design and more effective in heat transfer. The principal thought in the design of this furnace was to concentrate the heat on the edges of the skelp, as the body of the skelp needs a bending heat only,



Gas-fired skelp furnace and pipe rolling and welding mill which are continuous and automatic in operation

and this was accomplished by placing a long

row of gas burners in each side of the furnace so that they would fire against the edges of the skelp as it passed through. The speed at which the skelp moves runs from 150 to 225 ft. per minute, depending upon its weight.

This furnace is of brick and steel construction, 125 ft. long, 4 ft. wide and 5 ft. high. Instead of dragging the hot skelp over a rough hearth it is pulled along over a series of water-cooled skids where there is no chance of it picking up foreign substances such as slag, silicon particles, etc. As concentration of the heat application was the most important factor the heating chamber proper is only 11 in. wide and 14 in. high and the burners fire through bell mouthed refractory tunnels so that the heat transfer is through convection, radiation and flame impingement. These tunnels as well as the lining of the furnace are constructed of Silimanite which will withstand a temperature of 3,300° F. The burner tunnels are so designed that once the temperature is attained, the gases issuing from the tunnel are completely burned and at a temperature closely approaching the theoretical flame temperature. Thus one cause of furnace inefficiency, that of lack of provision for protecting burn-

By J. B. NEALEY
American Gas Association

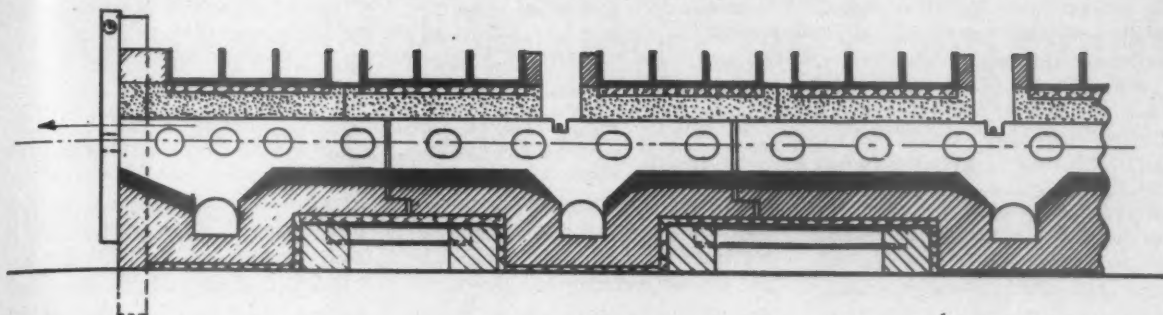
ing gases from dilution with inert flue gases be-

fore combustion has been completed, has been overcome.

There are 80 of these burners, 40 to a side and these are manifolded, four to an inspirator set of the low-pressure type. Of course, the function of the inspirators is to constantly and automatically maintain the desired and predetermined ratio of gas and air and to intimately mix the two. With these features the rate of combustion is 1,000 cu.ft. of gas per hour in a single cu.ft. of combustion chamber space which is exceptionally high. The total capacity of the burners is about 70,000 cu.ft. of gas per hour. Air for combustion is delivered to the inspirators by a 1,500-lb. turbo compressor with a capacity of 9,000 c.f.m. at 24 oz., while the gas supply from the mains is reduced to zero pressure by two sensitive regulators, one for each side of the furnace.

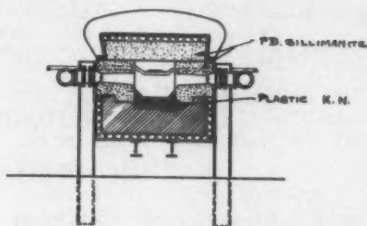
The production rate is a direct factor of the furnace temperature, in this particular application, and amounts to 10 tons of 1 1/2 in. conduit hourly with a consumption of only 3,700 cu.ft. of gas per ton of work.

Now the third improvement in this plant is a method by which the edges of the skelp are stepped up to full welding heat outside of the furnace.



As the strip steel emerges from the furnace it passes through forming rolls which give it the round shape of pipe with the edges in close contact. They require just a little more heat for welding and this is obtained by playing a jet of air on the hot edges. The reaction of the oxygen of the air and the carbon of the steel brings the temperature from 2,500-2,600 up to around 2,800° F. and the skelp passes directly into a set of rolls which press the edges together into a perfect welded seam. The pipe then passes through several sets of sizing rolls which true it up to its final shape and diameter. It is now cut up into lengths by a high-speed rotary saw, mounted on a traveling carriage, which moves along at the same speed as the conduit while it is sawing through, and then returning for the next cut.

The lengths, after being cooled, are passed through straightening rolls, tested under hydrostatic pressure and then accumulated in a cradle from whence they are picked up by crane and removed to the finishing division. Here the pipe is given one of three finishes, galvanizing, black enameling or electro galvanizing. In all three treatments the inside is always finished in black enamel. It is in this department that the fourth notable improvement in pro-



Sectional view of furnace showing details, burner locations, etc.

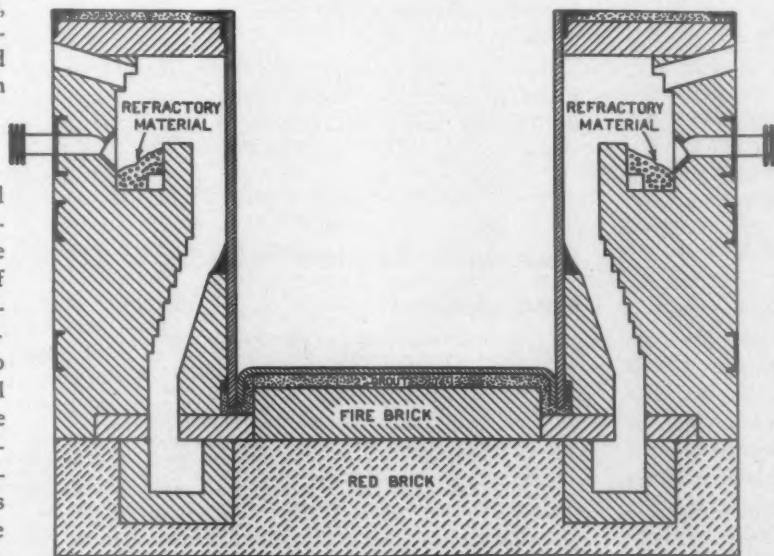
duction methods has been made and it consists of an entirely new manner of heating the galvanizing tank or kettle.

Heretofore galvanizing tanks or kettles have been heated from the bottom, but the designers of the one in this plant took into consideration that all of the cold metal was introduced at the top, the cold work enters at the top, quantities of cold air were always in contact with the top surface of the liquid metal and that much heat was

lost through black body radiation from this surface. This led to the conclusion that the heat was needed most in the upper part rather than at the bottom, so the burners are set about a foot and a half below the top.

This galvanizing tank is 4 ft. wide, 4½ ft. deep and 24 ft. long and sets in a brick furnace, which in turn rests in a pit in the floor, so that the pipe can be handled in and out with greater ease. The furnace walls, including refractories and insulation, are about 2 ft. in thickness. Heat is supplied through 36 gas burners, 18 on each side and in a single row. These are high-pressure impact burners utilizing gas at 20 lbs. and procure primary air for combustion, in the correct ratio, through inspirators. These burners are cemented in the outer furnace wall, and just in front of each is a small chamber, built directly into the wall, in the bottom of which is a bed of refractory material.

The gas burners fire directly onto these refractory beds which bring them up to incandescence. The hot products of combustion are drawn over a low bridge wall and down the sides and bottom of the kettle to a common duct, running the entire length of the tank, to a stack. The radiation from the refractory beds is to promote complete combustion in



Cross section of galvanizing kettle and furnace showing details, burner location, etc.

the shortest space and quickest time. While the furnace walls facing the kettle become radiant and radiate a large quantity of heat to the kettle walls, most of the heat into the tank is through convection, due to the fact that the distance between the furnace and kettle walls was so designed as to provide the greatest velocity for the products of combustion passing through. This method provides material savings in fuel, labor and dross accumulation, increases production and tank life and improves the quality of the product.

The process of dipping the conduit is controlled through guide bars and notched discs. These guide bars are bent to form half loops, the ends resting on the sides of the kettle so that the loops hang down in the molten spelter. A long drum, motor driven, is mounted on the top of the tank and forms a shaft for four notched discs of the same diameter as the loops and with notches to catch the pipes individually. When this drum is rotated the discs push the pipes from one side of the tank down through the flux and molten spelter where it is coated inside and out, and up to the other side. Here an operator picks up one end of each pipe as it comes out, passes it through a small steam blowing pipe in the shape of a ring and touches it to two motor-driven magnetic rolls. The rolls pull it out of the tank and through the steam ring where the extra spelter is blown off and delivers it onto a rack or cooling table. At this point another operator places the bell mouth of a steam pipe over one end of each piece of conduit and blows out any extra spelter that may remain inside.

The pipe is then finished into conduit by threading, coupling and protectors are applied and finally the inside is black enameled. This latter is accomplished by laying the conduits out on a rack and forcing the ends onto nozzles in manifolds through which the black enamel is allowed to run. This enamel flows through the pipes and is caught in a tank at the other end. It is then baked on in a gas-fired oven. Those pipes that are black enameled inside and out are suspended from special hangers on a chain and bar type conveyor which

runs through a bake oven. This conveyor is so designed that the pipe first descends and is immersed in a tank of black enamel from which it gradually rises and is passed through a bake oven of the A type. Gas burners furnish the heat which is automatically maintained by temperature controllers. The baking period is regulated through the speed imparted to the conveyor by the motors operating it. Hence this coating and baking operation is continuous and automatic.

Electro galvanizing is accomplished by suspending the pipes from huge racks which are handled by overhead cranes and hoists. With this equipment the pipes are submerged in deep electroplating vats where a coating of zinc is deposited, both inside and out, by electrolysis. The inside is then flooded with black enamel as previously described, and then is baked on.

Without doubt this is the most modern and economical plant of its kind in the world.

Third Bituminous Conference Proceedings Ready

ANNOUNCEMENT is made of the publication of the Proceedings of the Third International Conference on Bituminous Coal, which was held under the auspices of the Carnegie Institute of Technology, Pittsburgh, Pa., in November, 1931.

The proceedings, printed in two volumes of approximately 900 pages each, include all papers and discussions delivered at the four-day meeting. Contributions of scientists from Belgium, France, Germany, Holland, Italy, Japan, Roumania, Spain, Sweden, and the U. S. S. R. have been translated into English. Illustrations and graphs have been incorporated in the books.

Among the subjects which were discussed by outstanding experts during the conference and which are included in the two volumes are: Economics of

the bituminous coal industry, competition between fuels, low-temperature and high-temperature carbonization, coal carbonization problems, gasification, by-products, hydrogenation and liquefaction, railway and steamship fuel, domestic utilization of coal, power plant fuel, pulverized fuel, smoke and dust abatement, preparation of coal, coal cleaning, origin and classification, and steam pollution.

Of the ninety-eight papers included in the proceedings, thirty-nine were contributed by Americans, twenty-two by British scientists, twenty by German fuel technologists, and seven by French.

The third proceedings are similar to the two sets previously issued. These books are regarded throughout the world as standard reference works on fuel technology.

Commission Decisions Referring to Service Charge Form of Rates

- Re: Joplin Gas Company (Mo.), P. U. R. 1927E, 149.
- Re: New Jersey Northern Gas Company (N. J.), P. U. R. 1927A, 835.
- Keyport v. County Gas Company (N. J.), P. U. R. 1928C, 325.
- Re: Alabama Power Co. (Ala.), P. U. R. 1929A, 458.
- Re: Georgia Power Company (Ga.), P. U. R. 1929B, 156.
- Re: Georgia Power Company (Ga.), P. U. R. 1929B, 309.
- Re: Laclede Gas Light Company (Mo.), P. U. R. 1929A, 561.
- Customers for Gas v. Brooklyn Borough Gas Co. (N. Y.), P. U. R. 1929D, 433.
- Re: Wausau Gas Company (Wis.), P. U. R. 1929E, 493.
- Re: Public Service Electric and Gas Co. (N. J.), P. U. R. 1929E, 17.
- Re: Alabama Utilities Service Co. (Ala.), P. U. R. 1930B, 142.
- Re: Pacific Gas and Electric Co. (Cal.), P. U. R. 1930D, 466.
- Re: Brooklyn Union Gas Co. (N. Y.), P. U. R. 1929D, 171.
- Re: Brooklyn Union Gas Company.
- Customers for Gas in the Thirty-first Ward, Borough of Brooklyn v. Brooklyn Borough Gas Co. (N. Y.), 1931D, 129.

Plumbers Not Willing Gas Companies Stop Merchandising*

THE National Association of Master Plumbers was organized in the City of New York in the year 1883. The association was made up at that time of delegates from local organizations of Master Plumbers from twenty-seven of the leading cities of the United States. I would like to say that the organization from the City of Boston joining in the national at that time was formed in this city in the year 1845. We have maintained our national affiliation since 1883. We are now organized in every state in the Union. Today, we have a membership of approximately 10,800 Master Plumbers. We have maintained this membership throughout this general depression. We have today a greater membership than we ever had before.

Our national association was formed for the following purposes: First, for the advancement of sanitation; second, for the encouragement of sanitary laws; third, for the improvement of plumbing appliances and plumbing work; fourth, for the education of the members of the craft in all that pertains to the betterment of plumbing; fifth, for the education of the members of the craft as to the best methods of conducting such a business; sixth, for the establishment of harmonious relations between our membership, architects and engineers, our source of supply and labor; and seventh, for the education of the apprentice and the establishment of an apprentice system.

Our national organization has a scholarship fund of \$150,000, in order that we may maintain at the Carnegie Institute of Technology, at Pittsburgh, Pennsylvania, eight young men, giving them a full college course and educating them in the science of plumbing. We give these young men approximately \$700 a year. They are selected in public competition throughout this country.

By P. W. DONOGHUE

President, National Association of Master Plumbers

Our national headquarters are located in the City of Washington, District of Columbia. We have no paid men in connection with our organization, with the exception of the office force in headquarters. All national officers and all committee men serve without compensation.

For many years many of our local associations throughout the country have been protesting the activities of the gas companies in their communities, complaining that the gas companies were selling gas appliances at a price which eliminated them from competition. We, as a national organization, have protested many times against this unfair practice.

Last year the American Gas Association adopted six merchandising principles applying to the sale of gas appliances. On invitation from the American Gas Association the National Association of Master Plumbers appointed a committee to discuss these principles with the gas association. As a member of that committee, I visited the City of New York and with other members of the committee attended the conference. After reading over these principles, the committee approved of them and submitted them to the Forty-Ninth Annual Convention of our National Association, held in Milwaukee, last June.

Our national convention approved these principles, and instructed their national officers to use their best endeavors to have our local associations throughout the country contact their local gas companies and arrive at an understanding on the sales of gas appliances based on these principles.

As national president it was my duty this year to contact our membership throughout the country and give wide publicity to the principles

adopted. This I have done by publishing the principles complete in our convention proceedings. I have also sent one communication to every member of our National Association. The total issue of this communication was over 14,000. I have sent several letters to each state president, and two letters to each local secretary and local president telling them of these principles, and asking their support in our effort to have our entire membership adopt these principles and have them put into force in their communities throughout the country.

We have given additional publicity to these principles through our state journals and through our trade magazines.

The national officers of our organization are unanimous in the opinion that the gas merchandising principles will make it possible for the Master Plumber to become one of the principal retail outlets of gas appliances in every community where these principles are adopted.

The national officers are very much pleased at the attitude that our membership has assumed towards these sales principles. I have received innumerable communications telling me that our membership is now in a position, in various parts of the country, to act as merchandisers of gas appliances at something over and above their cost. In other words they have arrived at understandings with their gas companies and are now going to turn out to be gas salesmen.

Considerable time and effort have been given to this work, and we are sincerely grateful to the work of Mr. Cuthrell's committee (Dealer Relations Committee, Commercial Section of the A. G. A.), and to the very fine work and support that have been given to us by Major Alexander Forward. I did not know at the time that Major For-

(Continued on page 131)

* Digest of Address before the New England Gas Association, Boston, Mass., Feb. 4, 1932.



Timothy Quinn



G. C. Leavy



E. J. Walsh



L. C. Jacobs



Geo. McKenna



Cedric Peterkin



Louis Roos

Thirty Employees Receive McCarter Medals



J. Forgiione



H. W. Scheller

WHEN the Quarter Century Club of the Consolidated Gas Company of New York and its affiliated companies held its eighth annual dinner at the Waldorf-Astoria Hotel, New York, N. Y., Monday, February 8, thirty McCarter Medals, awarded under the auspices of the American Gas Association for the saving of life by the prone pressure method of resuscitation, were presented employees by Oscar H. Fogg, vice-president of the company.

More than 1,400 persons attended the dinner, and a total of 403 new members were admitted, the membership of which is limited to those who have completed twenty-five years or more of continual service with the Consolidated Company and its affiliates.

A total of 206 medals and citations for acts of conspicuous bravery in saving human life were presented during the evening.

Honor was also paid to a group of five men when Floyd L. Carlisle, chairman of the board of The New York Edison Company, presented special emblems to those employees who have more than fifty years of continuous service to their credit. Those honored were: Frank W. Smith, president of The New York Edison

Company; F. L. Lambrecht, auditor of disbursements, Consolidated Gas Company; Richard Shepard, superintendent of pavements and permits, Consolidated Gas Company; Thomas Byrnes, engineer, The Astoria Light, Heat and Power Company; and Henry Franz, secretary, United States Mineral Wool Company, a subsidiary of the New York Steam Corporation.

The Consolidated Gas Company Meritorious Service Awards, consisting of twelve silver medals, 113 bronze medals, and forty honorable mention certificates, were presented by Frank W. Smith, the newly-elected president of the New York Edison Company. Colonel John Stilwell, vice-president of the Consolidated Gas Company, presented the Quarter Century Club buttons to the 403 new members.

Many veteran employees prove a bulwark of strength in any organiza-



A. Dittmar



James Nolan



W. S. Wyatt



Geo. Keil



Wm. Connolly



E. H. Pritchard



Jno. McKiernan



C. Koebler



E. J. Blum



J. A. Hauser



J. F. Murphy



Chas. Czirkak

tion, and especially so in public utilities which give 24-hour service day after day, Mr. Cortelyou said in addressing the gathering.

"For the first time we are bringing together in one meeting all those eligible for the various honors to be bestowed, in all of our companies, gas, electric, and steam," he stated. "This splendid assemblage is convincing proof, if any were needed, of the high quality of our personnel—a body of earnest and loyal men and women not to be surpassed anywhere for devotion to duty in public service.

"Our utilities take a just pride in the record they have made and are making in the current depression. As I said sometime ago, while continuing to improve their standards of efficiency and of economical operation, they have generally maintained their forces intact and have consistently inaugurated and advanced large-scale construction projects to meet the future commercial and domestic requirements for gas and electricity. While their industrial load has felt the effects of the generally lessened business activity, this has been offset to a considerable extent by natural growth in new territory and enlarged domestic and commercial uses of their service. The domestic load has held up well."

In explaining why the domestic load has held up, at a time when people are curtailing their expenditures in all other directions, Mr. Cortelyou said that it can only mean that people realize that gas and electricity are among the most economical items in the family budget.

"When people have to be carefully selective in their expenditures they naturally favor those that yield the largest return in satisfaction of their needs," he continued. "In using our service to light and heat their homes, cook and preserve their food, and perform many other tasks they find they are getting more real value for their money than they can get by a similar outlay for any other purpose. In no other direction will their dollars go as far or accomplish as much.

"That is why they are using our facilities to the extent they do, and that is the best possible proof that the rates for gas and electric service are essentially low and reasonable, because, if they were not, the volume of use would decline similarly to the decline that has taken place in the use of goods and services generally. Whatever you may hear or read to the effect that utility rates are so high as to discourage or penalize use of the product, the people know by that wisest of teachers—experience—that the contrary is true, and they are not misled. The companies as well as the public are vitally interested in rate schedules that will encourage the maximum use of their product by all classes of consumers at the lowest cost compatible with good service.

"We have every reason to feel proud of our utilities because, while they are business organizations subject to the mutations that affect all business, they have been true servants of the public welfare in these serious times; and in this feeling all of our employees are entitled to share. The record would not have been possible without



H. E. Walker



Wm. A. Nelson



J. S. Scheller



J. J. Daly



P. C. Mongidre



Harry Polger



J. B. Brady



Pat. O'Conner



P. A. Gerathy

your loyal cooperation, and I want to assure every one of you that your companies appreciate your successful efforts to keep utility service in this city up to the highest standards. The reputation of a company is in the hands of its employees. The people have no other standard by which to judge their utilities than the treatment they receive from us as utility representatives. Let us, then, while taking a proper satisfaction in the record of the year just closed, resolve to make the coming year one of continuing progress and accomplishment by rendering still better service and establishing still more friendly and mutually helpful relations with our customers, the public."

Those who received McCarter Medals were as follows:

Charles Koehler, Consolidated Gas Company of New York, on July 3, 1931, applied prone pressure method of resuscitation to save the life of a six-year-old girl. Mr. Koehler has been previously awarded a Medal for an act performed on January 30, 1926.

Harry Polger, Consolidated Gas Company of New York, on May 5, 1931, applied prone pressure method of resuscitation to save the life of a woman. Mr. Polger has been previously awarded a Medal for an incident performed on November 1, 1928.

William A. Nelson, Consolidated Gas Company of New York, on November 26, 1930, applied prone pressure method of resuscitation to save the life of a woman. Awarded Medal. Also on June 17, 1931, applied prone pressure method of resuscitation to save the life of a man. Awarded Bar.

Edward J. Blum, Consolidated Gas Company of New York, on May 15, 1931, in the course of attending to assigned special duties, applied prone pressure method of resuscitation to save the life of a woman.

Joseph B. Brady, Consolidated Gas Company of New York, on May 12, 1931, in the course of attending to assigned special duties, applied prone pressure method of resuscitation to save the life of a man.

William Connolly, Consolidated Gas Company of New York, on December 24, 1930, in the course of attending to assigned special duties, applied prone pressure method of resuscitation to save the life of a man.

Charles Czirjak, Consolidated Gas Company of New York, on November 24, 1930, applied prone pressure method of resuscitation to save the life of a man.

Joseph J. Daly, Consolidated Gas Company of New York, on August 27, 1930, applied prone pressure method of resuscitation to save the life of a woman.

Albert B. Dittmar, Consolidated Gas

Company of New York, on February 26, 1931, applied prone pressure method of resuscitation to save the life of a fellow employee who had been overcome while working in a gas producer.

Joseph Forgione, New York and Queens Gas Company, on May 27, 1931, applied prone pressure method of resuscitation to save the life of a man who had been overcome while working in a street excavation.

Peter A. Gerathy, Central Union Gas Company, on June 25, 1931, in the course of attending to assigned special duties, applied prone pressure method of resuscitation to save the life of a woman.

Joseph Anthony Hauser, The East River Gas Company of Long Island City, on November 22, 1931, applied prone pressure method of resuscitation to save the life of a man.

Lester C. Jacobs, Consolidated Gas Company of New York, on November 28, 1930, applied prone pressure method of resuscitation to save the life of a man who had been overcome in a street excavation.

George Keil, Consolidated Gas Company of New York, on July 20, 1931, applied prone pressure method of resuscitation to save the life of a fellow employee who had been overcome while working in a street excavation.

George C. Leavy, Consolidated Gas Company of New York, on December 29, 1930, with two strangers acting under his instruction, applied prone pressure method of resuscitation to save the lives of three members of a family.

George McKenna, New York and Queens Gas Company, on June 3, 1931, applied prone pressure method of resuscitation to save the life of a little girl.

John McKiernan, Consolidated Gas Company of New York, on March 10, 1931, applied prone pressure method of resuscitation to save the life of a woman.

Peter C. Mongiori, Consolidated Gas Company of New York, on April 19, 1931, applied prone pressure method of resuscitation to save the life of a woman.

Joseph F. Murphy, Central Union Gas

Company, on September 8, 1931, applied prone pressure method of resuscitation to save the life of a man.

James Nolan, Consolidated Gas Company of New York, on May 20, 1931, applied prone pressure method of resuscitation to save the life of a man.

Patrick J. O'Connor, Consolidated Gas Company of New York, on May 23, 1931, applied prone pressure method of resuscitation to save the life of a man.

Cedric Peterkin, Consolidated Gas Company of New York, on June 25, 1931, applied prone pressure method of resuscitation to save the life of a woman.

Elias H. Pritchard, New Amsterdam Gas Company, on October 27, 1931, applied prone pressure method of resuscitation to save the life of a man.

Timothy Quinn, The East River Gas Company of Long Island City, on November 19, 1930, applied prone pressure method of resuscitation to save the life of a little girl.

Louis Roos, Northern Union Gas Company, on April 3, 1931, in the course of attending to assigned special duties, applied prone pressure method of resuscitation to save the life of a man.

Henry W. Scheller, Central Union Gas Company, on May 8, 1931, in the course of attending to assigned special duties, applied prone pressure method of resuscitation to save the life of a woman.

John J. Scheller, Consolidated Gas Company of New York, on June 29, 1931, applied prone pressure method of resuscitation to save the life of a woman.

Howard E. Walker, Northern Union Gas Company, on March 22, 1931, applied prone pressure method of resuscitation to save the life of a man.

Edwin J. Walsh, Consolidated Gas Company of New York, on April 17, 1931, applied prone pressure method of resuscitation to save the life of a woman.

Wilbert Stanley Wyatt, Consolidated Gas Company of New York, on March 22, 1931, applied prone pressure method of resuscitation to save the life of a fellow employee who had been overcome while working in a gas producer.

An Executive Viewpoint of Public Utility Service

THE distribution of gas by a utility without rendering uniform service and adequate appliance maintenance would fall far short of giving the public a utility service such as they may rightfully expect. Uniform service should include a constant gas supply free from any undue variations in heating value, gravity, or pressure so that appliances once properly adjusted will continue to render good service over an extended period. Appliance maintenance is important, not only in order to render safe service, but also to assure ourselves that the customer is receiving from the appliance all that was intended. The promotional side of our business is made much easier when customers know that we are always ready to stand in back of the appliances we sell with prompt and efficient service. Expert mechanical service if not rendered with courtesy and promptness will materially detract from the value of the service. All customer contact employees can contribute towards the improvement of our service by being accurate, prompt, and courteous. The mechanical details are readily provided for by special training.

By N. T. SELLMAN, Assistant Secretary and Director of Sales and Utilization, Consolidated Gas Company of New York.

A. G. A. Affiliated Associations—

How They Started and How They Have Grown

MID-WEST GAS ASSOCIATION

TWENTY-SEVEN years ago there was born in Iowa an organization of gas men. The youngster was lusty and enthusiastic. Healthy nourishment supplied by thirty-three sponsors brought steady and vigorous growth. The number of sponsors also grew until today they exceed 250.

So expanded the Mid-West Gas Association. At the outset, in 1905, it was sponsored exclusively by representatives of the gas industry in Iowa. Its first president was L. L. Kellogg, of Sioux City. Other officers were George McLean, of Dubuque, vice-president; and F. W. Kelly, of Davenport, secretary-treasurer.

"The object of that little association," according to R. B. Searing, pres-

Herewith is the third of a series of articles appearing in the "A. G. A. Monthly" giving an outline of the history and accomplishments of State and district utility associations which are affiliated with the American Gas Association. Work of these associations has proved of great value and a distinct contribution to the advancement of the gas industry. It is believed that this series will focus yet greater attention on the splendid records of these organizations.

ent secretary-treasurer, was for the promotion and advancement of knowledge in all matters relating to the construction and management of gas works in the manufacture, distribution and consumption of gas; the establishment and maintenance of a spirit of fraternity between members and by a general exchange of information and ideas; the inducement and extension of more cordial and friendly relations between the manufacturers of gas and their patrons, based upon a mutuality of interest.

By 1907, the Iowa Association had attracted wide attention and the name was changed to the Iowa District Gas Association and its membership enlarged to embrace gas men of Iowa, Nebraska and South Dakota. Later the membership was spread out to include the States of North Dakota and Minnesota, the name again being altered to that which it is today—Mid-West Gas Association.

Twelve years ago this association inaugurated the first gas meter men's school. This was done jointly with the Engineering Extension Service, Iowa State College, Ames, Iowa, and the activity has grown steadily. The short course now covers all points in connection with gas meter work and

gas distribution problems. Its eleventh annual course brought out a registration of 174 students. This educational work is provided without cost to meter and distribution men.

The Mid-West Gas Association idea has become so popular that several other schools and associations have undertaken similar work.

Good attendance always marks the annual conventions of this organization, and its members are proud of the friendly relationship which exists among them. Their next convention will take place April 11-12 and 13 at St. Paul, Minn.

The present officers of the association, in addition to Mr. Searing, are as follows: J. K. Swanson, Minneapolis Gas Light Company, Minne-

(Continued on page 131)



L. L. Kellogg, of Sioux City, First President of the Mid-West Gas Association



J. K. Swanson, President, Mid-West Gas Association

Affiliated Association Activities

New England Gas Association



I. T. Haddock

AFINE program was presented before a record-breaking attendance at the annual meeting of the New England Gas Association, held in Boston, February 3 and 4. A spirit of moving forward, in spite of general conditions, was manifested both on the part of speakers

and delegates. It was a gratifying meeting to attend as it proved there is teamwork in the gas industry at a time when teamwork is most needed in all industries.

President M. B. Webber, in his address, did much to introduce the solid and sensible attitude of optimism which gathered momentum as the meeting progressed. He pointed out the firm progress made by the industry in New England and forecast a bright future because of the strong co-operative effort manifest throughout the membership of his association. Several concrete suggestions were made by Mr. Webber which, leaders think, merit the careful consideration of the entire industry, among them being that of a new unit of measurement to be adopted to be called the American Thermal Unit equal to 4,000 B.t.u.'s. An A.t.u. would be equivalent to approximately 11/5 kw.hr. or to one kw.hr. utilized at 100 per cent efficiency with gas at 80 per cent efficiency.

The report of the executive secretary, C. D. Williams, indicated an active year during which a goodly number of important activities were conducted. The association Roster today embraces a total of nearly 1,100 members. The financial condition of the organization was reported in a healthy condition by the treasurer, F. D. Cadwallader, vice-president of the Boston Consolidated Gas Company.

The convention unanimously approved the report of the Nominating Committee, G. W. Stiles, chairman, electing the following officers: President, I. T. Haddock of Cambridge; first vice-president, H. R. Sterrett of New Haven; second vice-president, Fred M. Goodwin of Boston; treasurer, F. D. Cadwallader.

Directors-at-large—R. L. Fletcher, John West, David Daly, W. F. Norton and R. H. Knowlton.

Results of the New England Gas Association sales contests were announced by J. J. Quinn and received with keen interest. These contests have been held for a number of years and have not only increased appliance sales but have also developed comparable and valuable statistics on such sales.

In an interesting and informative address on "Management and Responsibility,"

Convention Calendar

Oklahoma Utilities Association,
Tulsa, Oklahoma.

March 8 and 9, 1932.

American Chemical Society,
New Orleans, La.

March 28 to April 1, 1932.

New Jersey Gas Association,
Newark, N. J.

March 30, 1932.

A. G. A. Distribution Conference,
Tutweiler Hotel,
Birmingham, Ala.

April 6, 7 and 8, 1932.

Maryland Utilities Assn.,
Lord Baltimore Hotel,
Baltimore, Md.

April 8, 1932.

Mid-West Gas Association,
St. Paul, Minn.

April 11, 12 and 13, 1932.

Pennsylvania Gas Association,
Galen Hall,
Wernersville, Pa.

April 26, 27 and 28, 1932.

Southwestern Gas Measurement
Course of the Oklahoma Utilities
Assn.,

University of Oklahoma,
Norman, Oklahoma.

April 26 to 28, 1932.

Missouri Association of Public Utilities,
Excelsior Springs, Mo.

April 28 to 30, 1932.

Southern Gas Association,
New Orleans, La.

May 3, 4 and 5, 1932.

National Fire Protection Association,
Atlantic City, N. J.

May 9 to 12, 1932.

American Gas Association,
Natural Gas Department,
Tulsa, Oklahoma.

May 9, 10 and 11, 1932.

Chamber of Commerce of United States,
San Francisco, Calif.

May 16 to 20, 1932.

National Electric Light Association,
Atlantic City, N. J.

June 5 to 10, 1932.

Institution of Gas Engineers,
General Meeting,
London, England.

June 7, 8 and 9, 1932.

Canadian Gas Association,
Fort Garry Hotel,
Winnipeg, Manitoba.

June 9 and 10, 1932.

Michigan Gas Association,
Grand Hotel,
Mackinac Island, Mich.

July 5 to 7, 1932.

Pacific Coast Gas Association,
Davenport Hotel,
Spokane, Wash.

August 23 to 26, 1932.

American Gas Association,
Atlantic City, N. J.

October 10 to 14, 1932.

Institution of Gas Engineers,
Annual Research Meeting,
London, England.

November 1 and 2, 1932.

W. J. Donald, managing director of the American Management Association, pointed out that a utility association is more in the nature of a professional organization than is a trade association of an unregulated industry.

The afternoon session on February 3 was opened by an address "What the Manufacturers Expect from the Gas Companies," by David F. Kahn, president of the Estate Stove Company and chairman of the American Gas Association's Manu-

facturers Section. Mr. Kahn made a strong appeal for a thorough understanding of, and sympathetic action toward the problems of the manufacturers to the ultimate benefit of both.

In a timely address on "What Shall We Do About It?" Mr. Leasure, of the Chamber of Commerce of the United States, clearly outlined the action being taken by organized business to cope with present conditions.

It was evident that the paper presented

by H. R. Sterrett, vice-president and general manager of the New Haven Gas Light Company was carefully prepared. The study indicated that—

1. That good customer-service is vital to the life and growth of the gas industry.
2. That no other group can render this service as efficiently and as economically as the gas company.
3. That not only should gas companies render the best of reasonable service, gratuitously, but the industry should be extremely careful to protect this prerogative, the cost of which is accepted as an element of operating expense in the determination of rates.
4. That efficient service, both adequate and satisfactory, can be rendered economically, at a very nominal cost, considering its promotional value in sales and good will.

Mrs. Katherine A. Fisher, director of *Good Housekeeping* Institute opened the morning session on February 4 with an address, "What Women Expect from the Utilities." Mrs. Fisher in presenting the women's viewpoint served much food for thought which should eventually improve the good health of the gas industry.

W. A. Gilman, vice-president, N. W. Ayer & Son, Inc., followed with an interesting address on "The Twilight of Industry."

A report of the Committee on Dealer-Utility Relations, Carl Cummings, chairman, presented a carefully prepared analysis of the situation in New England which should greatly aid in the eventual development of concrete recommendations. President Webber announced that the board of directors had voted to continue the effective work of this committee.

President R. W. Gallagher of the American Gas Association opened an interesting afternoon session with an address in which he emphasized the importance of organization work within the industry. He said "More and more it seems to me the importance of a regional organization is becoming apparent. The momentum of the industry as a whole is, of course, vitally dependent upon organization of the industry. Without this momentum and completely organized effort, we as individual companies or units could not expect the progress that we are entitled to. But the organization of an industry as a whole, particularly one that covers a continent, also implies the organization of its parts, for in that way it is possible to relate organized effort more effectively to particular and sectional conditions, and these conditions are of many and different sorts."

A stirring address on "Our Most Important Sales Problem" was delivered by Samuel Insull, Jr., vice-chairman, The Peoples Gas Light & Coke Company of Chicago and chairman of the American Gas Association Commercial Section. Mr. Insull pointed out that, during a ten-year period, while the electric industry has increased its

total output to a greater extent, the gas industry has increased its sales per customer—an achievement to which the gas man can point with pride. He urged a spirit of going forward and straight ahead.

The greetings of the American Gas Association headquarters were extended by Alexander Forward, managing director, who presented the 1931 statistics for New England indicating a better showing than in any other section of the country.

The next speaker, P. W. Donoghue, president of the National Association of Master Plumbers, reported the approval by his organization of the principles of dealer relations as adopted by the American Gas Association and gave assurance of a co-operative spirit on their part in the movement.

The last item on this attractive program was a stirring and humorous address on "Civics for the Civilized" by John B. Kennedy, editor of *Colliers Weekly*.

Missouri Association of Public Utilities

THE twenty-sixth annual convention of the Missouri Association of Public Utilities will be held April 28, 29 and 30, at Excelsior Springs, Mo. The membership of the association includes virtually all of the privately owned gas, electric, water and electric railway companies in Missouri.

About 275 delegates from throughout the State are expected to attend. Many of whom will be accompanied by their wives, and a special entertainment program is being arranged for the ladies.

Among the speakers and their subjects will be: "A Message to the Gas Utilities of Missouri," R. W. Gallagher, Cleveland, Ohio, president of the American Gas Association; "Greetings to Missouri Utilities," J. F. Owens, Oklahoma City, Okla., president of the National Electric Light Association; "The Growth of Farm Electrification in Missouri," Dr. E. A. White, Chicago, Ill., director of The Committee on Relation of Electricity to Agriculture; "Public Relations in the Utility Field," Phillip H. Gadsden, Philadelphia, Pa., vice-president of United Gas Improvement Co.

An open forum for the discussion of timely utility topics will be held on the evening of April 28. The discussion will be led by C. H. Waring, Kansas City (Mo.) Gas Co.; M. L. Margenau, Empire District Electric Co., Joplin, Mo.; and L. W. Helmreich, Capital City Water Co., Jefferson City, Mo.

A merchandising session will be held April 30, at which F. M. Rosenkrans, chairman of the Merchandising Committee of the association, will make a report and speakers will discuss the merchandising situation in various states.

Interesting features will be a motion picture film in colors, "The Lake of the Ozarks," by the Union Electric Light &

Power Company, St. Louis, Mo.; and a safety exhibition by the Safety Department of the Kansas City (Mo.) Power & Light Company.

President A. E. Bettis, Kansas City (Mo.) Power & Light Company, will preside at the business sessions, and will be toastmaster at the annual banquet. Paul C. Ford, Kansas City (Mo.) Gas Company, is chairman of the committee, which is arranging the entertainment program. H. E. Scheark, Kansas City (Mo.) Power & Light Company, is chairman of the Program Committee.

The Maryland Utilities Association

THE annual meeting of The Maryland Utilities Association will be held Friday, April 8, at the Lord Baltimore Hotel, Baltimore, Maryland.

During the morning parallel sessions of the three groups of the association—electric, gas and transportation—will be held, at which discussions will take place on matters affecting the various companies making up the respective groups. In the afternoon addresses will be made by men prominent in the utility field. A business session will follow at which directors and officers will be elected for the ensuing year.

A dinner dance will feature the evening session. Governor Albert C. Ritchie, of Maryland, prominently mentioned as a Presidential candidate, Mayor Howard W. Jackson, of Baltimore, and others prominent in political, social and commercial life will be in attendance.

Adrian Hughes, Jr., of The United Railways & Electric Company of Baltimore, is president of the association; F. A. Mitchell, of the Eastern Shore Public Service Company, vice-president, is in charge of the program; W. A. Tobias, of the Hagerstown Light & Heat Corporation, is treasurer, and D. E. Kinnear, of The United Railways & Electric Company, secretary.

D. D. Ransdell, of the Washington Gas Light Company, is chairman of the Gas Group; C. H. Leatham, of the Potomac Edison Company, chairman of the Electric Group, and R. H. Dalgleish, of the Capital Traction Company, chairman of the Transportation Group.

Mid-West Gas Association

THE convention of the Mid-West Gas Association will be held in St. Paul, Minn., April 11, 12 and 13 with headquarters at the St. Paul Hotel. An attendance of 250 to 300 is expected by the committee on local arrangements of which Louis Stein has been chosen chairman. Announcements concerning the program will be made later by the chairman of the committee, W. E. Derwent.

Southern Gas Association

AN attractive program is being arranged for the annual convention of the Southern Gas Association to be held in New Orleans, May 3, 4 and 5. The following addresses for the general sessions to be held on the mornings of the three days have already been arranged:

"What the Manufacturers Expect from the Gas Companies," by D. E. Kahn, president of The Estate Stove Company, Hamilton, Ohio, and chairman of the Manufacturers Section of the American Gas Association; "How Utility Sales Activities Affect Dealer Sales," by W. R. Putnam, Electric Bond and Share Company, New York, N. Y.; "Business and Government," by Alexander Forward, managing director, American Gas Association, New York, N. Y.; "Securing House Heating Load," by James F. Orr, United Gas Public Service Company, Houston, Texas; "Advantages of Dealer Cooperative Merchandising," by L. C. DeLeon, Master Licensed Plumber; "Employee-Customer Relations Course," by W. C. Grant, Lone Star Gas Company, Dallas, Texas; "Holding the Cooking Load," by Hall M. Henry, The Utility Management Corporation, New York, N. Y.

The afternoons of May 3 and 5 will be devoted to sessions of the Commercial Section in which it is planned to cover and discuss many important problems including commercial and domestic load building activities and appliance merchandising. This part of the convention program is being arranged by a committee headed by R. C. Anderson, merchandising manager, Mississippi Power and Light Company and Chairman of the Section.

An interesting program is being prepared for the meeting of the Technical Section by a committee with B. B. Ferguson, president and superintendent, Portsmouth Gas Company, Portsmouth, Va., as chairman.

The afternoon of May 4 will be devoted to the Industrial Section, Charles M. Rogers, engineer of the New Orleans Public Service, Inc., chairman.

Plans for entertainment are well in hand and will be in line with the city's well-known tradition for hospitality and its reputation of being "America's Most Interesting City."

President E. N. Avegno, of New Orleans, and Jack Stone, secretary and treasurer, of Birmingham, are actively supervising all arrangements for the convention. Further developments on the program will be announced in later editions of the MONTHLY.

Oklahoma Utilities Association

THE fourteenth annual convention of the Oklahoma Utilities Association will be held March 8-9 at Tulsa, with headquarters and all sessions at the New Tulsa Hotel. This year the program is planned for two days only, March 8 and

9, with preliminary or opening session Monday night, March 7, this being a first aid and safety work contest and demonstration in which teams representing leading utilities of the State will participate. A general session for all divisions will be held Tuesday morning, March 8. Joint sessions of all divisions except telephone will be held Tuesday afternoon and all day Wednesday. The Telephone Division will have its special sessions throughout the convention except on Tuesday morning.

At the general session Tuesday morning, messages will be given by representatives of the national associations—J. F. Owens, president of the N. E. L. A.; Kurwin R. Boyes, secretary of the American Gas Association, and T. J. Strickler, chairman of the Natural Gas Department, American Gas Association. F. B. MacKinnon, president of the United States Independent Telephone Association, and a representative of the American Electric Railway Association, also are expected. Mr. Owens will speak also at the convention dinner at 6:30 p.m., March 8, where he will discuss the general utility situation in the light of 1932 conditions.

Mr. Boyes will speak on "Employee-Customer Relations." Other speakers on customer relations will be W. H. Bagley, of the Oklahoma Natural Gas Corporation, J. P. Arnold of the Public Service Company of Oklahoma, and others.

Rural electrification will furnish a feature of the program, talks being made by Professor A. Naeter, of the electrical engineering department, Oklahoma A. & M. College, and Earl Miller of the same institution, who has made a twelve months' intensive study of specific results of farm electric installations in Oklahoma, these talks being followed by motion pictures of the installations described and discussed.

Results, to date, of the anti-merchandising legislation adopted by the Oklahoma Legislature last winter, will be discussed by William Parkerson, commercial manager of the Public Service Company of Oklahoma, followed by W. J. Young of the Oklahoma Natural Gas Corporation, C. A. Breitung, Ada, Okla., Oklahoma manager of the Southwest Gas Utilities Corporation and others.

"Net Revenue Possibilities—1932" will be the subject of a talk by G. S. Adamson, commercial manager of the Oklahoma Power & Water Company of Sand Springs, who will point out specific economies which utility companies can adopt this year to improve their operating results.

S. I. McElhoes, vice-president, Southwestern Light & Power Company, and president of the association, will discuss legal aspects of the franchise question.

The usual Women's Committee Luncheon-Conference will be held beginning at noon March 8, under direction of Mrs. Peggy Carr, Oklahoma Power & Water Company, state chairman.

New Jersey Gas Association

THE New Jersey Gas Association will hold its annual convention on Wednesday, March 30, at the Public Service Auditorium, Newark, N. J.

An outstanding program has been prepared, featuring subjects of particular interest at this time. The morning session of this one-day meeting will include addresses by Louis Stoecker, president of the association, and Alexander Forward, managing director of the American Gas Association. This will be followed by an address on customers service by a nationally known leader in this field. Harry Ellis, of Public Service Electric and Gas Company, will then describe an interesting engineering project in connection with the laying of a submarine cable. The morning session will be concluded with an address on home service work by Mrs. A. Mixter, of the Hartford Gas Company.

During the afternoon session E. D. Milener, industrial research representative of the American Gas Association, will discuss some of the recent activities of his organization. H. P. Morehouse, chairman of the New Jersey Gas Association Industrial and House Heating Committee, will describe a new pocket manual prepared by his committee for house heating engineers.

C. E. Bartlett, president of The Bartlett Company, Philadelphia, Pa., will deliver an address on merchandising water heaters. A paper on a technical subject yet to be selected will be presented, followed by a presentation by Dr. W. T. Reed, dean of Rutgers University, who will summarize the gas research work done at the university during the year under the auspices of the association's research fellowship.

Pennsylvania Gas Association

PLANs for the forthcoming meeting of the Pennsylvania Gas Association, which will be held at Galen Hall, Wernersville, April 26, 27 and 28, are nearly completed, according to H. Smyser Bair, president of the association. Mr. Bair is anticipating a record attendance at the meeting.

Takes up Studies of Manufactured Gas

AMONG recent enrollments in the Home Study course in Manufactured Gas, conducted by Columbia University and sponsored by the Committee on Education of Gas Company Employees of the American Gas Association, is Achilles S. de Oliveira, of the *Empresas Electricas Brasileiras*, Rio de Janeiro, Brazil, South America. Mr. de Oliveira is associated with Edward H. Bauer, a former chairman of the committee sponsoring the course.

Technical Section

I. K. PECK, Chairman

H. W. HARTMAN, Secretary

K. H. CREE, Asst. Secty.

J. A. PERRY, Vice-Chairman

Distribution Engineers Plan to Attend Birmingham Conference

NEVER before in the history of the gas industry, leaders say, has it been so important to assemble a group of engineers in discussion of problems affecting both the economics and technique of gas distribution, and this opportunity will be presented at the forthcoming Distribution Conference to be held in Birmingham, Alabama, April 6, 7, and 8 next. Distribution engineers throughout the country look forward each year to the time when they and their confreres may gather in conference to discuss in detail problems concerning the distribution department and the distribution of gas.

Change-over topics will receive the careful attention the importance of the subject warrants; many other interesting problems will be discussed.

Service to customers, always of the greatest importance to the industry, has a place on the program.

Gas service to customers is handled in many different ways by gas companies. Some of the larger companies have an elaborate system whereby calls are received and handled by a regular central dispatching telephone switchboard; calls are routed to districts and further to service men from this central point, thus causing the least amount of delay and inconvenience in making proper adjustments on the customers' premises. Other companies have found that periodic calls to consumers, especially in smaller communities have proven successful.

Many of the larger gas companies are training employees to repair and adjust certain types of gas consuming equipment. There may be a crew for domestic ranges and water heaters; another to handle house heating equipment and still another for refrigeration. These men receive thorough training in the appliances which they are expected to service and in this way complete and satisfactory ad-

justments are made without delay. All of these matters and their related problems will be discussed in detail at the conference and the delegates will take home much valuable information.

Along more technical lines are papers and discussions on pipe joints, pipe coatings and corrosion, and unaccounted for gas. Those who have attended these conferences in the past will recall the initiation of the pipe-joint research program which has been diligently adhered to for the past several years, and is practically being brought to a conclusion now. This committee is doing splendid work in establishing new practices with regard to repairing and caulking joints in gas mains; the conference report will be most interesting and is eagerly awaited by the industry.

Corrosion research carried out by the United States Bureau of Standards under the auspices of the American Gas Association Corrosion Committee will be described by the Association's Research Associate and it is promised that many new developments will be brought to light in this presentation. There will also be presented papers on local problems which should prove interesting and valuable. In connection with the corrosion research, a study is being made to establish a standard form for recording corrosion data which can be used by all gas companies.

A valuable report on unaccounted-for gas is being prepared and will recommend and describe a standard method of recording results.

The Meters Committee is preparing a paper on the economics of moving locked and inactive meters. Every company has this problem and the paper and discussion setting up satisfactory routine procedure should be of great value to those interested in the removal of inactive meters.

The Open Forum, which has always been given considerable time on our program, will be continued this year. It is hoped that many engineers who have local problems will take the opportunity of bringing them to the front on this occasion.

At the conference last year a new plan was tried in allowing a one-half day for an inspection trip on the second day of the meeting. This plan was so satisfactory that this year a full day for inspection on the second day of the meeting is planned and an inspection will be made of all of the large pipe manufacturing plants in Birmingham. Busses will be provided for the delegates and they will be escorted through the plants by competent guides; a number of the various operations taking place in the plant will be so timed that all delegates will have an opportunity to view them. Birmingham, as everyone knows, is the home of the cast-iron pipe industry, and most of the different types of pipe are made there, including the pit cast, deLavaud, McWane & Mono-cast. The laboratories will also be available to the visitors to bring before them the latest developments in pipe joints, and pipe materials. Everyone attending the meeting will want to take this inspection trip, which will be followed by the evening meeting. This proved a great success and a number of very interesting topics are planned for discussion; this meeting begins promptly at 8 o'clock.

In planning the conference the committee has not overlooked the fact that many delegates will want to have a little relaxation aside from the routine of ordinary business. Birmingham is noted for its many beautiful golf clubs and those who play the ancient and honorable game will want to bring their clubs. Accordingly, arrangements have been made



Birmingham from the air

Distribution Conference Headquarters



The Tutwiler Hotel, Birmingham, Alabama

with various golf clubs where delegates may play a few holes on some of the finest courses in the South. During April Birmingham enjoys fine spring weather.

Birmingham also has many hotels. This conference will have its headquarters at the Tutwiler Hotel which is centrally located, and within easy walking distance to the downtown shopping centers. Arrangements have also been made

with other hotels should the occasion arise where their services will be required.

Birmingham borders on the natural gas area and natural gas men especially will have easy access to that city. Birmingham also has excellent transportation facilities and there are many railroads running crack trains from all sections of the United States through this territory.

Chemical Composition of Coal Bulletin Ready

IN 1927, the Carbonization Committee of the American Gas Association recommended cooperation with the Bureau of Mines in a preliminary study of laboratory and small scale testing methods

for determining the carbonizing properties of coal.

An advisory committee under J. S. Haug (United Engineers and Constructors, Inc.) is credited by Dr. Fieldner and his associates (J. D. Davis, R. Thiessen, E. B. Kester and W. A. Selvig) with having been most helpful in planning

the general course of the investigation.

The work is reported in U. S. Department of Commerce, Bureau of Mines Bulletin 344—"Methods and Apparatus Used in Determining the Gas, Coke, and By-Product Making Properties of American Coals." Copies may be secured through the Superintendent of Documents, Government Printing Office, Washington, D. C., or through A. G. A. Headquarters, a supply having been purchased for the convenience of members. The price of the book is 40 cents.

"Microscopic Study of Elkhorn Coal Bed" is another highly interesting technical paper prepared by Reinhardt Thiessen, research chemist and microscopist, Pittsburgh Experiment Station, United States Bureau of Mines; George C. Sprunk, assistant chemist, American Gas Association, and H. J. O'Donnell, under scientific aide, Pittsburgh Experiment Station, United States Bureau of Mines, and recently has been released by the Government Printing Office, Washington, D. C., where copies may be secured at 20 cents.

The paper describes the results of work done under the cooperative agreement between the United States Bureau of Mines and the American Gas Association. It is profusely illustrated by interesting microphotographs, charts and profile sections.

Are You Wearing the A. G. A. Pin?

These small emblems, designed in blue and gold, are unusually attractive and durable. Price \$2.

MAIL THE COUPON

AMERICAN GAS ASSOCIATION,
420 Lexington Avenue,
New York, N. Y.

Here's my check for \$2. Please send me an A. G. A. Membership Pin.

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City

Publicity and Advertising Section

WILLIAM H. HODGE, Chairman

ALLYN B. TUNIS, Secretary

HENRY OBERMEYER, Vice-Chairman

New Window and Store Display Makes Striking Appeal



How one background may be used as two displays. It is capable of being converted into several displays

SEVERAL months ago an executive of one of the leading advertising agencies of the country remarked, in effect, that the greatest single factor in the promotion of retail sales in America in 1931 would be the proper utilization of window and sales floor displays in retail stores.

That this same situation exists today is most aptly illustrated by the increasing throngs of "window" and store shoppers that throng the retail shops of the country. Merchants throughout the nation state that more people are hunting and picking and seeking for bargains than ever before in the history of modern merchandising. Two reasons, at least, contribute to this condition. First, while money will buy more, there is less of it in circulation, hence merchandise must be sought more diligently, and second, with more time on their hands, and less money for other forms of diversion, people have more time to personally inspect and select merchandise.

It was with these conditions in mind, as well as the necessity for the more efficient spending of money in effective sales and advertising effort, that prompted us to turn our attention more seriously to the window and store display problem.

The advantage of this form of advertising—striking with "eye-appeal," catering to the instinctive desire of people for comfort, for convenience, for health, for pleasure, right at the point of sale—the window and the sales floor—is of greater importance to the utilities of the country

By KEITH CLEVINGER
Director of Publicity and Advertising,
American Gas Association

for the reason that a very large proportion of utility customers visit the office and sales floors of their local company, or one of its branches, at least once a month, and, therefore must pass its windows and merchandise displays. Accordingly, a study was made of this form of sales promotion, in cooperation with the Window and Store Display Committee of the Commercial Section of the American Gas Association, which had for several years issued a window display bulletin, at regular intervals, for interested Association members illustrating various types and examples of effective display materials and usage. That this ground work of educational effort has been beneficial will be proven by a recital of the results obtained from this most recent effort to promote this type of advertising among the gas companies of the country.

After much planning, a series of displays in miniature were arranged, which would offer a minimum of twelve window displays, flexible enough to permit of rearrangement for as many as sixteen to eighteen window settings, as well as being serviceable for attractive floor displays when not in use in the windows.

The series includes three backgrounds, six feet in height and capable of setting for from eight to sixteen feet width, together with some thirty life-size cut-outs of display figures and twenty miscellane-

ous display pieces emphasizing the service of the particular appliance or appliances to be featured. These backgrounds and display figures are finished in a manner that assures a durability that will stand use many times and in many different ways.

The three backgrounds consist of a Dutch tile kitchen, a bathroom background and a combination drawing room and basement background. Each background is made up of two back panels, and two wing (hinged) panels, all wood-framed and caseled for use as separate pieces on display floors. They are arranged for locking or lacing in the window.

The schedule of subjects feature four gas range and two refrigerator topics, three hot water (bathroom) topics, and five gas house heating (both furnace and space) displays.

Our first "feeler" letter was mailed February 4 and within ten days we had received replies from seventy-one companies in twenty-six states and Canada, indicating interest and prospective orders for in excess of 110 complete sets. The next few days brought responses materially increasing these earlier returns to well in excess of 140 representing eighty companies in thirty-two states and Canada.

One factor that is uppermost in the promotion of this feature, and that is the price of this service, an average of \$15 per window display, to say nothing of its usefulness on the sales floor, at fairs and exhibits.

Personal and Otherwise

C. H. Critchfield, for the past two years with the Gulf Cities Natural Gas Company, at Goose Creek, Texas, has been named manager of the La Porte, Texas, operations of the company.

F. D. Shaffer, vice-president and safety director of the Southwestern Light and Power Company at Chickasha, Okla., retired from service March 1. Mr. Shaffer has been in utility service since 1890 and went to Chickasha in 1913 as manager of the Chickasha Gas and Electric Company, which was later purchased by the Southwestern Light and Power Company.

Charles F. Keyes, president of the Minneapolis Metropolitan Drainage Commission, has been appointed a member of the Minneapolis Gas Light Company's board of directors in order to represent the municipality in gas matters.

Frank E. Kistler, oil man of Tulsa and Denver, has been elected a member of the board of directors of the Oklahoma Natural Gas Corporation with headquarters at Tulsa, Okla. Mr. Kistler succeeded E. C. Deal, former president of the corporation and more recently chairman of the board, who resigned in order to devote more time to other business interests. Mr. Kistler was also appointed chairman of the finance committee.

Bruno Rahn, chief engineer of the Milwaukee Gas Light Company, Milwaukee, Wis., has been appointed general manager.

M. B. Fowler, formerly secretary and treasurer of the San Diego Consolidated Gas and Electric Company, San Diego, Calif., has been elected vice-president and treasurer of the company. L. M. Klauber was elected vice-president in charge of operation; A. E. Holloway, vice-president in charge of sales, and J. A. Cannon, secretary.

Harold B. Schum, an official of the Hope Natural Gas Company, was recently elected president of the Clarksburg, W. Va., Chamber of Commerce.

W. C. Katker has been reelected president of the Favorite Stove and Range Company.

Alexander Gaddess, formerly director of public relations of the Pennsylvania Electric Association, has been appointed manager of publicity of the United Gas Improvement Company's public relations department. C. E. Wetzell, who has been in charge of the publicity of the U. G. I. and system companies, will devote his time to advertising work for those companies in addition to managing the U. G. I. Circle.

C. W. Teeples, employed by the Greensboro Gas Company at Browns-

ville, Pa., for the past 31 years, has retired.

H. L. Snyder, vice-president and general manager of the New York and Queens Electric Light and Power Company, has been elected president of that company.

C. S. Bagg, general manager of the Montreal Light Heat and Power Consolidated, has been appointed vice-president of the company. Mr. Bagg has been identified with the company in various executive and official capacities for the past 25 years. W. H. Spencer has been given the work of safety engineering and C. C. Parkes has been made assistant secretary of the Montreal company.

J. G. Davidson has been elected vice-president of the Carbide and Carbon Chemicals Corporation, New York, N. Y. W. F. Reich, Jr., has been made general sales manager of that company.

W. J. MacDaniels, treasurer of the Northern Union Gas Company, was recently elected president of the Gas Companies' Employees' Mutual Aid Society which has direct charge of the employee welfare activities of the Consolidated Gas Company of New York and its affiliated gas companies.

New York Appliance Dealers' Sales Increase

PLUMBING and heating concerns and other retail dealers in the territory served by the Consolidated Gas Company of New York and its affiliated gas companies increased their sales of gas appliances by 52 per cent during 1931, according to an announcement last month by Oscar H. Fogg, vice-president of the Company.

A total of 91 plumbers and dealers in Manhattan, Bronx, and Queens took part actively in the cooperative sales program of the company during the year, Mr. Fogg stated.

"The largest gas appliance business on record was reported by several of our cooperating dealers," Mr. Fogg said. "Many dealers more than doubled their net profits from gas appliance sales as a result of their active participation in the cooperative plan."

"The ultimate aim of this cooperation is the exclusive sale and handling by all appliance dealers within our territory of gas-burning equipment which bears the seal of approval of the Testing Laboratory of the American Gas Association."

Constructive help and suggestions in the form of merchandising counsel and of display and advertising material are supplied by the Gas Company to the cooperating dealers without charge.

Gas appliances of all types are sold by the cooperating dealers, including house

heating furnaces and boilers, automatic gas refrigerators, water heaters, space heaters, and ranges.

A. G. A. Issues New List of Publications

A NEW and revised list of publications has been issued by the American Gas Association, bringing up-to-date and superceding previous issues. It is pertinent at this time to observe that the Association is the source of much valuable and authentic information which has not yet been discovered by many in the gas industry. The new list provides an index to the extensive publications of the Association, adequate distribution of which would do much toward a better informed industry.

New York Court Rules Gas Range Is Not Fixture

CHIEF Judge of the Court of Appeals Benjamin N. Cardozo, recently elevated to the United States Supreme Bench, in his annual address before the State Bar Association in the grand ballroom of the Hotel Astor, New York, January 22, discussing law, alluded to a recent decision of the Court of Appeals that a gas range is not a fixture. Under old decisions made when most people lived in separate dwellings and the modern apartment was unknown, a stove was held to be mere personality and not a fixture.

Judge Cardozo said: "Such a conclusion, however, has an aspect unreal and almost farcical when applied to apartment life today." He then said that in 1913 the Court of Appeals faithfully followed the old decision and held that a gas range was not a fixture. In 1929 a case involving the same question again came up before the Court of Appeals. Judge Cardozo then said: "Now what was a court to do in 1929 when the same court in 1913 had considered the same argument and found it insufficient? What was it to do, bearing in mind the fact that sellers of the ranges under contracts of conditional sale had made their sales in the faith that the ranges were personality merely, and had refrained from taking measures to protect themselves by recording their bills of sale in ways that would have been appropriate if they had supposed that the ranges were annexations to the land?"

"Well, a majority of the court believed that in view of the probable reliance by innocent parties upon a decision which the same majority would have refused to make if the question had been a new one, there was nothing to do except to adhere to what its predecessors had done, and let the state decide control of the judgment. That is what we did, though there was a dissenting vote at that."

The Judge was expounding his views on judicial process and tracing the middle road for law.

Industrial Gas Section

W. F. MILLER, Chairman

C. W. BERGHORN, Secretary

Book Reviews

The American Society of Heating and Ventilating Engineers Guide, 1932. 6 x 9". Divided into 552 pp. of text and some 300 pp. of equipment catalog. Illus. \$5.00. A. S. H. V. E., 51 Madison Ave., New York City.

The 1932 *Guide* appears in an entirely new dress, and extensive changes can be noted in the contents as well. Five new chapters have been added over the 1931 *Guide*, and all of the data has been carefully checked and revised. The obvious authority of a work of this kind developed by the national society, and critically reviewed by its committees, makes it unnecessary to comment on the value which this book has for every heating engineer.

The American Gas Association book *House Heating* owes much to the new text of the *Guide*, especially on the important problem of the coefficients of heat transmission.

The section on gas in the *Guide* is necessarily short. The section on gas appliances gives satisfactory but brief treatment of the various types of gas heaters available, but it is felt that additional data on both the conversion heating system and industrial unit heaters should be added in the 1933 *Guide*, in order to acquaint the heating industry at large more fully with the special character of these two appliances.

The catalog section has been carefully coordinated with the text, and contains supplementary information on specific materials, equipment and accessories available for heating and ventilating service. In this section will be found sizes, shapes, capacities, space requirements and applications so important in the actual planning and specifying of material. The two sections are interlocked so as to be indispensable to each other.

—C. GEORGE SEGELER,
Industrial Engineer

Industrial Publicity

THE Publicity Committee, Industrial Gas Section of the American Gas Association, directs attention to the following articles recently published:

"Preparing Asphalt Roofing." Chemical & Metallurgical Engineering, February, 1932.

"Continuous Manufacturer of Welded Conduit." Steel, February 8, 1932.

"Several Types of Gas Furnaces Used

in Rivet and Nut Plant." Iron Age, January 21, 1932.

"Combination Forge Furnace & Steam Boiler Proves Economical." Fuels & Furnaces, January, 1932.

"Corn Products Refinery Demands Accurate Process Control." Mill & Factory Illustrated, February, 1932.

"Tool Steel Gear & Pinion Company." Heat Treating & Forging, January, 1932.

"Making Two Bits Last Longer." American Machinist, January 14, 1932.

"Gas Furnaces Used in Heat Treating & Forging Stainless Steel." Fuels & Furnaces, December 1931.

"Lincoln Car Parts Heat Treated With Gas." Iron Age, December 31, 1931.

"Gas Fired Boilers Furnish Power for San Antonio Pumps." Water Works Engineering, December 16, 1931.

"Castings Extrude Miles of Lead Pipe Daily." Foundry, January 15, 1932.

Third Edition of "House Heating" Ready for Distribution

THE American Gas Association "House Heating," Third Edition Revised, is now ready. This standard reference book for all house heating engineers and salesmen has again been revised in the second printing of the Third Edition.

The particular new material which is going to interest all those in the house heating business includes the new A. G. A. installation requirements for conversion burners. The importance of these new requirements is so obvious that every house heating department will need an ample supply of copies of the new revision to provide each of their men with the suggestions for handling of conversion burners, if for no other reason. But in addition, the book contains revisions throughout which improve the text and make it more valuable.

The size of the book has been increased to 150 pages, and it still is available at the same price as the previous editions, \$1.50 a copy.

New Banana Room Heater Proves Successful

THROUGH the cooperation of certain equipment manufacturers and one of the large fruit companies, there has been developed a banana room ripener with certain safety features that make it a desirable improvement over open flame heaters which are so commonly used.

Banana rooms operate at high humidities and with closed doors, and consequently when the combustion takes place in the atmosphere of the banana room, it is possible that proper combustion will be interfered with.

The new ripener is designed to take all of its air for combustion from outside of the banana room, and to discharge the flue products into a substantial copper flue pipe, so that there is no connection between the atmosphere in the banana room and the combustion.

Moreover, the ripener is equipped with an automatic humidifier, temperature control, and a safety pilot, and sells for a price commensurate with the ability of the banana room trade to pay. This exceptionally low price has only been made possible through the cooperation of the fruit company, which is willing to merchandise this appliance without profit in order to protect the owners of banana rooms, and to enable them to secure a better and more uniform product. Installations of the new ripener have been made in many localities, particularly in Detroit, Cleveland and New York.

A. P. Watts Makes Progress Report on A. G. A. Ceramic Research

THE American Gas Association Committee on Industrial Gas Research was represented on the program of the annual meeting of the New Jersey Clay Workers Association, which was held at Rutgers University, New Brunswick, N. J. Arthur P. Watts, research fellow, American Gas Association Industrial Research, Project No. 11, presented a "Progress Report on the Direct-Firing of Glazed Ceramic Wares."

Mr. Watts' paper included a resumé of the research work completed to date, including the testing and direct-firing of 89 different types of ceramic glazes with uniformly successful results. Mr. Watts also outlined the many advantages resulting from direct-firing of ceramic wares with gas, including greater convenience, cleanliness, lowered cost of production and cheaper kilns and kiln maintenance.

The report was well received and many of those present availed themselves of the opportunity to visit the portion of the laboratory in the Ceramics Building devoted to A. G. A. industrial research for the purpose of inspecting the test pieces resulting from the numerous tests.

Oklahoma Towns Grant 25 Franchises in 1931

RECORDS of the Oklahoma Utilities Association reveal that natural gas franchises or contracts were granted during 1931 by twenty-five towns in Oklahoma. Several of these secured new systems during 1931 and others have hopes of obtaining service during the present year.

Manufacturers' Section

D. F. KAHN, Chairman C. W. BERGHORN, Secretary D. B. STOKES, Vice-Chairman ROBERT M. LEACH, Vice-Chairman

Manufacturers Start Move For National Advertising

RECOMMENDATIONS that the customary exhibit of gas appliances and equipment at the annual convention of the American Gas Association, to be held in Atlantic City, N. J., next October, be omitted and advocacy by the Manufacturers that a national cooperative advertising campaign be inaugurated, were among the chief resolutions adopted by members of the Manufacturers' Section, American Gas Association, who met in Chicago, February 18.

That this was one of the largest gatherings of gas appliance manufacturers on record is held by their leaders to be indicative of a full realization on their part that the producers regard the business outlook as dubious.

Those favoring an exhibit believed it would be an unwise step to abandon plans for holding the usual American Gas Association convention. Those opposing an exhibit in 1932 held that economic conditions would not justify such a display.

The final decision to recommend to the Executive Board that the exhibit be omitted was reached by a vote following considerable discussion which carried by a wide margin. The meeting was fully representative of appliance and apparatus manufacturers.

There was lengthy consideration on the matter of Standards of Practice. At the Executive Board meeting of October 12, 1931, Colonel E. S. Dickey, then chairman of the Manufacturers' Section, presented for the consideration of the Board "Standards of Fair Practice," prepared and approved by the range division, the water heater division, and the space heater division of that Section. At the request of Colonel Dickey, the board authorized the president to appoint a "Standards of Fair Practice Committee" to consider these proposed standards and to make recommendations to the Board as to its action thereon.

Since October 12, 1931, considerable study has been given to the subject. In conclusion, Philip O. Deitsch, manager of group activities of the Manufacturers' Section, read a brief resumé of reasons for the recommendations known as the "Revised Standards of Practice Recommended by the Standards of Practice Committee of the Executive Board of the American Gas Association," which reasons constituted a reply for E. R. Acker's report and were unanimously approved by

the meeting. Mr. Deitsch will submit the report to the Board on March 15.

"Should the Manufacturers Produce Only Approved Appliances?" was the subject ably handled by R. M. Conner, director of the American Gas Association Testing Laboratory at Cleveland. It seems that at the present time gas appliance manufacturers do not send models to Cleveland for the purpose of securing A. G. A. approval until the range, or other equipment, is on the line and in actual production.

During the interim while the range is in Cleveland being tested, etc., the manufacturer continues turning out the range. Naturally, these ranges do not bear the A. G. A. approval. A few months elapse before the A. G. A. approval is forthcoming. Then it is that the gas company or other merchandise dealer makes the claim that the range that first came off the production line is approved by the A. G. A., although it does not bear the stamp of approval.

This situation tends to lead into difficulties which frequently necessitate expenditures of money to rectify matters. Mr. Conner suggested that range manufacturers get their new models into the Cleveland laboratory before large-scale production begins. This procedure would mean that no ranges would of necessity have to be turned off the line without bearing the A. G. A. stamp of approval. He also said that he pledged the cooperation of the laboratory in speeding up matters and releasing approvals in record time.

P. R. Tappan, chairman of the cross licensing of patents committee, made a brief report on the subject assigned to his committee. The purport of the entire message was that four proposals have been made and all four have been rejected. As one possible solution, Mr. Tappan submitted to the members in the assembly specimen corporation papers for them to study. The idea is to create a corporation known as the Gas Appliance Manufacturers Corp., and have it incorporated in the State of New York. Each member of the Manufacturers' Section of the A. G. A. could be eligible for membership in this new corporation, legally, thus bringing about the legal pooling and cross licensing of patents. These specimen corporation papers were passed out to each member for further consideration.

"Are the Services of a Washington Representative Sufficiently Needed at This Time to Justify Entry into That Field?" was the title of a most illuminating paper read by L. F. Ryall, vice-president in charge of sales of the General Gas Light Company, Kalamazoo, Mich.

Floyd L. Carlisle Heads Consolidated Gas Board

FLOYD L. CARLISLE has been elected chairman of the board of trustees of the Consolidated Gas Co. of New York. George B. Cortelyou has been reelected president and will continue as operating head of the Consolidated Gas system.

Election of Mr. Carlisle to the office marks the first time that it has been filled since 1914, when it was vacated by Harrison E. Gawtry because of ill health.

Mr. Gawtry was one of the organizers of Consolidated Gas and moved from the presidency to the chairmanship of the board of trustees in 1905. When he left that office in 1914 he remained a trustee until his death in 1919.

Mr. Carlisle issued the following statement:

"I am happy to have an even more intimate part in the management of the Consolidated Gas group of companies than in the past. Among the 50,000 employees of the company there exists the greatest technical and scientific knowledge and experience within the public utility industry and its executives approach the public and social nature of the business with sanity and liberality.

"My election has no significance outside the Consolidated Gas family."

New Board Members

EUGENE H. ROSENQUEST, president of the Westchester Lighting Company, and Oscar H. Fogg, vice-president of the Consolidated Gas Company of New York, have been elected members of the board of directors of the United Electric Light and Power Company. Other new directors of United Electric Light are: Floyd L. Carlisle, head of the Niagara Hudson Power Corporation and chairman of the New York Edison Company, and Philip Torchio, senior vice-president of New York Edison and United Electric Light.

Commercial Section

SAMUEL INSULL, Jr. Chairman

J. W. WEST, Jr., Secretary

WALTER C. BECKJORD, Vice-Chairman

What a House Heating Salesman's Manual Should Contain*

By C. BREZEE

Supervisor, House Heating Division
Long Island Lighting Company

THE subject of what a salesman's manual should consist of and its value as a selling aid to gas heating is one that, I feel you will agree, differs in some respects dependent upon territory and rates as well as company policy and sales methods employed in various companies.

There are, however, many general requirements necessary in the making of a gas heating salesman's manual to be carried with him in the field but not, in my estimation, to consist of more material than can be carried in an ordinary brief case in a systematic arrangement whereby handy reference can be made on any particular requirement. In addition, much more material required from time to time should be on file in the office where it can be used quickly, when necessary.

The material that should be carried by a salesman in his brief case regularly should consist of at least complete equipment catalogs showing various specifications and prices on all of the particular manufacturers' boiler and burner equipment offered for sale by his company, survey sheets in order that all information can be compiled on same in making survey, A. G. A. book, 6-foot rule, order pads and term payment contracts as well as complete prices on automatic heaters of the make handled by his particular company. Catalogs indicating prices and specifications on competitive equipment for comparison should also be included as it very often happens that the customer has some other equipment in mind other than that sold by his company. In addition, an ideal fitter and all similar booklets should be carried in which are shown the various types and details on radiation in order that it can be readily determined as to the amount of installed radiation on any particular job having an existing heating system using some other type of fuel. Coal boiler manufacturers' catalogs as complete as possible should also be carried, in which detailed specifications are indicated in order that a salesman may readily determine the type of burner equipment necessary on any particular job in the case of Conversion Burner sales.

As much literature and bulletins containing information of value as possible should also be carried on oil burner equipment as to operating and equipment costs in order that on the first contact the gas heating story, as compared to other equip-

ment and operating costs on other fuels may be properly presented. In so doing he may convince the prospect to the extent that they will allow a survey to be made on gas heating, and, at the same time, endeavor to leave them in a receptive frame of mind for the presentation of the final heating estimate on equipment and operating costs. Bulletins and booklets, in which are shown estimated operating costs and actual operating costs on all existing gas-fired heating jobs in the company territory, should at this time also be presented to the prospect, and, providing the sale is not at this time made, left with them. This has a tendency to convince the prospect that the particular heating estimate for their home is made up on a fair basis and not just figures compiled for the purpose of inducing them to purchase heating equipment. All such material as above mentioned should be checked up regularly and obsolete data eliminated with new and more complete material added from time to time.

Complete catalogs indicating details and prices on automatic control equipment and as near as possible on insulation material should also be carried in order that it may be pointed out to a prospect the saving that might be effected in operating cost by having their home insulated and that it will also make it a better place in which to live with the added convenience of a cooler home during the summer months. It is also very often necessary to point out to a prospect the flexibility of gas heating with regard to maintaining variable temperatures in different parts of a home for certain periods with certain types of automatic control equipment whereby a fuel saving is also effected.

The booklets on record of performance data, as carried by our salesmen mentioned in a previous paragraph, contain all data on existing jobs on our company lines as well as testimonials from our customers indicating their satisfaction and advantages of gas heating in relation to its cost, photographs of installations, theoretical radiation, installed radiation, equipment installed, number of rooms together with the actual operating cost as obtained from our book-keeping records. These booklets are revised from time to time to include new jobs as they are installed each season, and, we feel, have been of great assistance in

convincing prospects when presenting the story on gas heating. This also puts each of our salesmen in a position that he is familiar with all jobs on our company lines not only in his particular territory but in other salesmen's territory as well, enabling him to furnish his prospect with any ordinary information desired on any particular job as it often happens that the prospect has some friend who has gas heating installed but the existing installation may be in another territory other than that covered by the salesman contacting the prospect.

Our salesmen also carry bulletins in which are outlined the monthly percentage breakdown on heating cost over the heating season, which enables them to quickly furnish a prospect with the information on their particular heating estimate. At the same time it can be explained more convincingly of the midwinter costs as compared to the fall and spring months which we find is very valuable due to the fact that the prospect may have in mind some user's gas bill, as rendered, during a midwinter heating month and keep that in mind as the user's average monthly cost, which makes them feel that gas heating, from their standpoint, is prohibited. Invariably we find that the average gas heating customer takes delight in pointing out their December or January bill, and in so doing have their friends think that it is the average monthly bill over the heating season. Records of prevailing temperatures over any given heating season, as compared to the average, are also compiled and carried in bulletin form by our salesmen in order that they may further and more convincingly explain operating costs to prospects or users who may feel that their gas bills are or might be excessive. The latter mentioned is also very valuable in contacting users who feel that they have high gas bills as our heating salesmen also take care of such complaints.

In presenting gas heating proposals all of our prices on equipment do not include installation; instead our prices include delivery only to the job. All heating installations are effected by heating contractors in our territory and our salesmen carry with them a complete list of all contractors in order that they may use the particular contractor of the prospect's choice, or, providing the prospect has no choice in the matter the contractor who offers us the greatest cooperation and who is located nearest to the job is selected. Our salesmen also carry a schedule of all heat-

* Address delivered before The Metropolitan House Heating Council Meeting, New York, January 20, 1932.

ing contractors installation prices on various size boilers, burners, water heaters or any equipment, we feel, is necessary in order that they may furnish the customer with at least an approximate estimate on the job completely installed.

The survey sheet which he carries, on which the installed radiation, theoretical radiation requirements and all data on the job are shown, is also carried by the salesman in furnishing a proposal, on which he may show the prospect just how their particular installation shapes up as to the amount of radiation installed with regard to the theoretical requirements, how same is distributed or point out any detail whatsoever which, we feel, would not bring about a satisfactory gas heating operation from a standpoint of proper heat distribution, economy of operation, etc. On the same survey sheet the size of the service, type of water heater used or any other details are also compiled and whether the job is sold or not this survey sheet record is kept in a permanent file for handy reference at all times in following up in order that we may be fully acquainted with any job, after a survey is once made.

Rate cards and meter applications are also carried by our salesmen as they are important in connection with the sale of gas heating in our territory due to the fact that it is a function of our Heating Department to see that all heating jobs are put on our Optional Rate. Our salesmen also carry a bulletin in which is outlined our method of billing together with a certain number of copies of user's accounts which point out to a prospect the interest shown in our users on each heating installation and stress is made of this point in convincing a prospect that the same interest will be shown in their installation providing gas heating is installed by them. Newspaper advertising copy, as promoted by our neighboring gas company is also carried in our salesman's manual, which has a tendency to lessen selling resistance and point out to a prospect that gas heating is being accepted and installed in a large way. We have found that this has helped us to a very large extent on speculative building projects and on individual sales in that part of our territory where the less wealthy class of customers reside by pointing out that gas heating is not beyond the means of the average home-owner or something for the millionaire class. We are all more or less familiar with what Queens County has done in this respect on certain building developments and our customers are also familiar with these jobs due to the advertising promoted by the gas company and builders in which they point out the fact that the houses are heated with gas. We find, however, that many prospects are often surprised that the moderately priced home is using gas for heating.

Much more material than above mentioned and which is of great value to the salesmen should also be on handy reference in the office, such as American Society of Heating & Ventilating Engineers Guide

Book of the latest issue, oil heating data books of any size that cannot be easily carried in a brief case or any other publications which we find, from time to time, desirable, should be added and all kept in an up-to-date manner. The salesman's desk prospect tickler file, we find, is also very important as each man has before him every day in a systematic arrangement cards on which are indicated all details pertaining to jobs surveyed but where the sale has not yet been closed with any remarks whatsoever indicated as to when a call back should be made. On these same cards are indicated the heating contractor who might be selected for the installation work together with his installation price or any information which would enable anyone connected with the Heating Department to furnish details to a prospect should they call in the office at any time while the salesman for that particular territory might be in the field.

There are also many other articles, which we find become necessary from time to time to be added to the salesman's manual, both to be carried in the field as well as on handy reference in the office. Such material is issued in bulletin form and distributed to all salesmen where it is compiled in a systematic manner in a memorandum book, but in a great many cases in the ordinary every day contact, such articles are used very little except where necessary. In order that we be prepared to meet all conditions we should never lose sight of

keeping all sales manual material of all description in a neat manner with obsolete material eliminated from time to time.

British Industrial Leader Is Dead

SIR ARTHUR DUCKHAM, president-elect of the Federal British Industries, and a prominent industrialist, engineer and expert on the coal industry, died February 14. He was fifty-two years old.

Sir Arthur visited America for a month last year, going to New York, Pittsburgh, Philadelphia, and Chicago. On his return he predicted that the United States would have to adopt the dole for the unemployed.

Arthur McDougall Duckham, after being educated at Blackheath School, London, began his career in engineering shops. When he completed his apprenticeship he made a special study of furnace work. The problem before the engineers of the day was to improve the carbonization of coal.

Sir Arthur's patents and chemical developments were used widely and he became chairman of seven companies in the fuel and engineering fields. His experience and information led to his appointment during the World War as a member of the Council of the Ministry of Munitions and of the Air Council, and as Director General of Aircraft.

Sir Arthur was knighted in 1917.

HOME SERVICE

HOME CALLS



Ten Cents a Copy

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First of a Series of Booklets

Devoted to:
the aims, organization
and operation
of Home Service
Departments.

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420 Lexington Avenue, New York City

Home Service Committee

HULDA UNGERICH, Chairman

JESSIE MCQUEEN, Secretary

Milwaukee Carries on Active Program

SIX years ago the Home Service Department of the Milwaukee Gas Light Company, Milwaukee, Wis., was organized to furnish service to its customers in many ways—lecture demonstrations, home calls on appliances and social club work.

In August, 1930, that company moved into a fine new office building of which two floors are devoted to home service. This includes an auditorium with a balcony that has a seating capacity of 500, three offices, a reception room, a dining room, two kitchens, and a dressing room.

The director's office, in dull violet and ivory, has the atmosphere of quietness, simplicity, and beauty. The adjoining room is a well-equipped business office with numerous files of tested recipes printed on cards of convenient size for home recipe boxes. More than 521,000 of these cards were distributed to customers the past year.

The spacious auditorium, with its warm color and comfortable chairs, is indicative of the cordiality for which the Milwaukee Gas Light Company is noted. On the stage is an arrangement of modern kitchen equipment using gas for lecture demonstration work. Through graceful doorways the reception room and dining room, furnished in the eighteenth century style, may be glimpsed.

Adjoining the dining room and back of the stage are two attractive green and black tiled kitchens where recipes are tested, classes in individual instruction held, and gas appliances demonstrated for prospective buyers.

There is little evidence in Milwaukee that the modern woman is no longer in-



Home of the Milwaukee Gas Light Co., Milwaukee, Wis.

terested in cookery. At present there are 1,500 enrolled in three series of weekly classes. More than 300 more could not be accommodated. It is not the policy of this company to give prizes at these

classes. However, certificates are issued to all who attend ten of twelve of a series of classes and monogrammed sterling silver pins are presented as souvenirs to those who have perfect attendance records. It has been found that these are greatly appreciated and treasured. They seem to give a certain stability to classes, a loyalty of purpose, and serve not only as reminders of home service and the gas company but, also, as advance press agents for future classes.

While the point of contact in these classes is purely educational, fundamentals in cookery and meal planning and the selection, use and care of gas appliances being emphasized, they have a definite promotional value, too, for they are planned to show the advantages of using modern gas appliances and to create in the minds of class members a desire to own these appliances. Through these classes the company also acquaints its customers with other activities of the Home Service Department.

One afternoon each week during the class season is devoted to meetings of organized groups such as church organizations, parent-teachers' associations, and federated clubs. Through these meetings 2,600 women were contacted last year.

A popular form of club entertainment in Milwaukee is the lecture-demonstration tea. An introductory talk acquainting the guests with the various activities of the Home Service Department is given. This is followed by a lecture-demonstration or an educational talk selected by the organization. An "oven dinner" is the most popular subject this year. This is obviously a satisfactory choice, for it



Homemakers cookery class, Milwaukee Gas Light Co.



Experimental Home Service Department, Milwaukee Gas Light Co.

affords an excellent opportunity to demonstrate the gas range, and to particularly stress the value of an oven regulator. After these lecture-demonstrations light refreshments are served. The guests then loiter in the kitchens, sometimes more than an hour, inspecting and asking questions about the different gas appliances in use. They see recipes being tested and developed. Finished experiments are on display. The seed is planted here for future gas appliance sales.

Groups of representative business women, such as the Women's Advertising Club and the Zonta Club, who cannot attend group meetings in the afternoon are entertained at dinner, after which a home service program, including an educational talk or skit, is given. The remainder of the evening is devoted to bridge or the club may furnish its own entertainment.

Whenever possible, it is preferred to have groups meet in the auditorium, but many times it is necessary to interview them elsewhere. Such groups as physicians, home nursing groups, some women's clubs, and social center groups are met in their respective meeting places.

It is felt that these group meetings afford excellent opportunities for acquainting consumers with company policies and modern gas equipment, thereby popularizing gas.

Perhaps more tangible results are obtained from Home Call work than from any other home service activity. Over 20,000 calls were made last year. All sales of ranges with oven regulators were followed up. In each case every part of the range was carefully inspected. The regulators were tested only when requested by the customer or when it was considered necessary by the instructor. A baking demonstration was given whenever it was necessary to verify a complaint. Adjustments were made by instructors in all cases where it was possible to do the adjusting. The other cases were reported to the Maintenance Department.

A follow-up call was made soon after the installation of every gas refrigerator. Instruction regarding defrosting, the correct placing and keeping of food in the refrigerator and the making of frozen desserts was given.

All request and complaint calls reported to the department were answered. In each case every part of the range was carefully inspected, special attention being given to the complaint. Survey calls were made on the South Side of Milwaukee.

About 970 calls were made on all new customers reported to the department by the billing department. In each case the customer had moved from another city. Everybody and everything was new to her. Because she feels the need of companionship so keenly, it is an opportune time to make a friend for the company. In some cases the customers had moved from places where gas was not available



Miss Ella Minor Lambert, Home Service Director, Milwaukee Gas Light Co.

and they therefore needed instruction in both the use of gas and of gas appliances. The home service instructor serves as a bureau of information to the customer and in this way a friendly relationship is established. It was found that these calls were greatly appreciated.

Personal contact is at its best in the home, for here there is a greater opportunity for studying and solving individual problems than in group meetings. Customers are acquainted with company policies; trivial cases of dissatisfaction are discovered and adjusted; friendly relations are established with new customers; idle appliances are restored to use and prospects for new appliances are obtained.

In a public school survey, thirty-five grade schools were visited, six junior high schools and seven senior high schools to inspect and adjust ranges and other gas equipment for class use.

A sales room activity is carried on in two branch offices. Home Service women were in attendance at the West Allis and Wauwatosa offices for several days preceding the tenth of each month. Foods which had been prepared in an experimental kitchen were displayed and recipes were given out to each person interviewed.

Home service, it is believed, aids in making customers gas-company conscious and the Milwaukee company their indispensable friend.

New England Home Service Meeting

TWENTY-SIX home service women held their annual meeting in connection with the New England Gas Association convention, Wednesday, February 3. Miss Daurice F. Darling, home service director of the Boston Consolidated Gas Company, presided as chairman.

New officers elected were as follows: Mrs. Carolyn Webber Bixby, New Eng-

land representative of the Roberts & Mander Stove Company; Miss Louise Dingwell, of the Brockton Gas Light Company, secretary.

Fletcher Taft, lecturer and business man, addressed the group at their luncheon on "Personality in Business."

Gassettes

THE Home Service Department of the Westchester Lighting Company, Mt. Vernon, N. Y., under the direction of Mrs. Cecil Harvey, reports considerable expansion throughout their branch offices. New lecture rooms recently have been completed in five branches with permanent platforms containing necessary gas equipment for lecture demonstration work. A junior cooking class for the benefit of public school children is held on Mondays after school in the Mt. Vernon auditorium. Two Girl Scout cooking classes on Saturday mornings are being conducted at New Rochelle and Port Chester.

Recently a series of twelve cooking classes of a group of Greek women with an average attendance of 100 was held in the Parish Hall of the Ukrainian Church, at Yonkers. Many women's clubs throughout the Westchester district have asked for lecture demonstrations so that throughout the year, with a department of fourteen Home Service people, this company is, in addition to an extensive "Home Call" program, carrying on eight to ten cooking classes a week throughout its territory.

The Peoples Gas Light & Coke Company

Mrs. Anna J. Peterson, home service director, in December, 1931, completed her ninth year as a radio speaker. Many letters of congratulation came to Mrs. Peterson expressing appreciation of the assistance given through this medium. Mrs. Peterson has perfected a new expression in the Home Service Department. Instead of the word "depression" she has crossed out the first syllable, rearranged the letter "i" and the expression is "I press on," proving that with this idea in mind her department has expanded in such a way as to require larger quarters for office work to take care of the greatly increased mail and telephone requests.

Iroquois Gas Corporation

A year ago Mrs. Luella Fisher assumed the position as director of the Home Service Department of the Iroquois Gas Corporation. In that time unusual progress has been made. Fourteen floor kitchens have been equipped, some as kitchens with auditoriums and others as set-ups on the sales floor.

Accounting Section

Wm. A. DOERING, Chairman

H. W. HARTMAN, Secretary

J. M. ROBERTS, Vice-Chairman

Rendering Duplicate Bills

By R. P. STACY

Director, Customer Relations, The Connecticut Light and Power Co.

GOOD MORNING! I wish to pay my gas bill," says Mrs. Customer—"But I don't have my bill with me."

What should be the cashier's response to this pleasant greeting? What should be the procedure from this point on until the company has accepted payment and Mrs. Customer, satisfied, is on her way with further shopping, household duties or social obligations?

Obviously, if the customer, as she says, wants to pay her bill, the cashier or the company (one and the same to the customer) should have no hesitancy in accepting payment. But the problem is not so simple—before the money can be accepted, the amount of the bill must be determined; and herein lies the difficulty which so frequently causes what started out to be a pleasant contact—one likely to be irritating to the customer and troublesome for the company to carry out.

Customer Relations Problem

Is this really a customer relations problem? Are there many customers who request duplicate bills?

A recent survey of the practice in 28 utility companies in the United States and Canada shows that this problem is considered to be very important in establishing good relations with customers. Many companies maintain accurate records of the number of duplicate bill requests. These requests vary between one and six per cent of the total bills rendered, or between 10,000 and 60,000 per million bills. Experience of these companies shows that duplicate bill requests vary as between one district and another in the same company, depending, perhaps, upon the habits of the people in the community. In some companies it is observed that the number of requests fluctuate according to the season of the year, but generally it is observed by those companies which have studied this problem over a period of years, that the duplicate bill requests remain fairly constant from month to month and from year to year.

There was no evidence uncovered indicating that customers may be "trained" not to request duplicate bills. Therefore, it is evident that this problem is one which will remain—there is no way to eliminate it—and of course any routine which is likely to irritate from one to six per cent of the customers each month must be considered a customer relations problem of importance.

The Customer's Viewpoint

A customer, wishing to pay for her electric service or merchandise purchased, naturally appears at the cashier's counter, whether or not she has her bill. She may

or may not have waited in line, depending upon the number of customers present at the particular time. Thus, when she is prevented from paying her bill and referred to someone else or some other section of the office, she is apt to be slightly irritated. Then, after she requests a duplicate bill, waits a few minutes for it, and is again referred back to the cashier in order that she can, at last, make her payment, there is little wonder that some customers feel they have not been given the prompt service they have a right to expect.

Any means of appeasing this very natural feeling on the part of the customer, while making her payment, is of course very desirable. Consequently, many companies have their duplicate bill counter located adjacent to the cashier's counter, and have attractive illuminated signs reading "Secure Duplicate Bills Here," "Duplicate Bills," etc., which is an aid in eliminating confusion and speeding the service. Also many companies provide comfortable seats near the duplicate bill counter in order that customers may be comfortable while waiting.

The attitude of the contact employees is perhaps the greatest factor in influencing the customer's feeling in this transaction. The manner in which the cashier refers the customer to the duplicate bill clerk, the greeting, the customer receives at the duplicate bill counter, and the manner in which the customer is told that a few minutes will be required to prepare a duplicate bill—all have a very direct bearing upon the patience and attitude of the customer.

Appreciating the value of good personal service, many companies make a special effort to train their contact employees in these contacts, and also to train the clerk in the consumers' accounts division in speed and accuracy in preparing the duplicate bill.

Time Required to Prepare Duplicate Bills

The time required to prepare duplicate service bills depends upon many factors, such as office arrangement, accounting system in use, means of quick transmittal of messages from branch offices to central office, and from the customers' counter to the accounting department; and especially upon the attitude and alertness of the contact employees. Regardless of office arrangements, and other features in any particular office, close supervision over and frequent check up on this service problem will produce good results. One company found by making a "test request" once every

few days the average time was reduced from 15 to 7 minutes. This was without any major change in system, and represents improvement entirely in the "human factor." Another company found by using time stamping machines the psychological effect was to reduce the time from 10½ to 6½ minutes. This result was accomplished over a period of three months. Again this was the result of closer supervision, as no change of any consequence was made in the system.

Some companies, having centralized billing and bookkeeping, use to good advantage teletype and telautograph machines in their branch offices. Where the consumers accounts division is not located on the same floor as the customers' counter, pneumatic tubes and hand-operated carrier systems are quite generally used.

However, one company prefers to have their customers walk from the first to the second floor and make their requests direct to a clerk in the accounting department, believing that this practice impresses the customer with the amount of work involved, and thereby tends to reduce the number of requests.

While several companies maintain accurate records of both the number of requests and the average time required to prepare a duplicate bill, the majority of the 28 companies reporting do not maintain these records. Those companies who do maintain accurate records report an average time varying from 3 to 15 minutes. Other companies generally "estimate" the average time to be five minutes. From personal observation and spot check by some members of this committee, some customers have been known to wait from 15 to 20 minutes. This, of course, is an imposition on the customer and just cause for her complaint. Here is a challenge to office managers, who do not already do so, to make a check at least once a week and accurately determine the time Mrs. Customer has to wait to secure a "duplicate" and pay her bill. If she has to wait more than five minutes the chances are that this service can be improved. One company reports that with an average of 400 duplicate bills issued per day the average time required is slightly less than four and one-half minutes. This data is deduced by means of time stamping machines and an accurate count of the number issued.

The plan followed by four representative companies in different sections of the country are described more in detail below:

The Connecticut Light and Power Company Plan

The Connecticut Light and Power Company and affiliated companies serve a popu-

lation of 750,000 people through 200,000 gas and electric meters. Its territory consists of both urban and rural communities, and is divided into 13 districts (or companies) each under the supervision of a district manager. Stub accounting is used, machine billing is used throughout, and is now being centralized in three divisions. However, each district office is complete so far as consumers' accounts are concerned. Office arrangements and personnel vary slightly in each district.

A customer when making a request for a duplicate bill usually makes the request to the cashier. The cashier refers the customer to the information clerk, usually at the same counter, in order not to delay other customers in the payment of their bills. The information clerk (using a carbon) enters the name and address of the customer on two copies of a form called "Payment Record." The customer is then told that a few minutes will be required to prepare a duplicate bill form, and asked to take a seat while waiting.

Both copies of the form are then delivered to the consumers' accounts division for information in amount only of the account outstanding. This amount is itemized as to Electric, Gas, Previous Bills Unpaid and Merchandise. The folio number and period of service is included on the form, which is then returned to the information clerk at the counter. This clerk gives both copies to the customer and directs her back to the cashier for payment. The cashier receipts both copies with a paid stamp, and returns the carbon to the customer.

In some cases a customer requests a complete copy of her original bill, but this is infrequent and usually a duplicate in amount only, is sufficient. When such requests are made a new bill is made out by hand. This operation usually requires more time as it is necessary to refer to a different record.

Requests for duplicate merchandise bills are usually expedited in the manner described above. However, if an itemized statement is required it is typed on a standard statement from much the same as that used by a department store. This type of duplicate bill is usually mailed the following day. As an aid towards decreasing the number of requests for merchandise bills, and to improve collection as well, a cardboard booklet, somewhat similar to a bank deposit book is used to record the items of the sale, and payments made. One of these booklets is mailed with the first merchandise bill sent to the customer. The cashier and information clerk suggest the use of this convenient payment record whenever possible.

Sometimes a request is made by mail, over the telephone, or at the counter for a statement of an account over a period of time, as for example—six months, or a year. This statement requires a longer time to prepare, and the customer is told that it will be mailed the following day.

No records are kept as to the number of requests, or the time required to prepare duplicate service bills, but as a result of

this service suggestion, some changes in the plan followed by this company will be made with a view toward closer supervision over this service problem, and a reduction in the time necessary to prepare duplicate bills.

The Rochester Gas and Electric Corp. Plan

The system for rendering duplicate bills developed by The Rochester Gas & Electric Corporation has some features which are not generally used by other companies. This company serves approximately 100,000 customers. Its accounting work is centralized in its main office at Rochester, New York. The new Hollerith system of accounting is used, and the accounting office is located on the second floor, whereas the sales floor and service counter are located on the first floor. Pneumatic tubes, dumb waiters, and, of course, telephones are installed between the first and second floor. The duplicate bill counter is located adjacent to the cashier's counter.

The form of bill used by The Rochester Corporation has a two-part coupon attached to the left end of the customer's bill. The billing data is printed on this coupon at the same time as the billing data is printed on the other portion of the bill which goes to the customer.

When a customer's bill is sent out, this two-part coupon is detached and sent to the duplicate bill counter where it is filed in geographic order. Thus, a duplicate bill is available at the duplicate bill counter as soon as issued and remains there until five days after the due date. After the fifth day following the due date these duplicates are sent to the collection department.

Duplicate bills may be paid at the receiving teller's cage, adjacent to the duplicate bill counter.

The Rochester Gas and Electric Corporation during 1930 issued 67,567 duplicate gas and electric bills and 35,803 duplicate merchandise bills.

The Consolidated Gas, Electric Light and Power Company Plan

The Consolidated Gas, Electric Light and Power Company at Baltimore serve approximately 225,000 electric and 200,000 gas meters. All consumers' accounts are centralized in Baltimore. The stub accounting system is used. Machine billing and addressographing are all done in the Baltimore office.

A separate window adjoining the cashier's cage is provided for duplicate bill requests. The clerk is equipped with a visible Rand index, so as to have the route and folio. A form is prepared by the clerk receiving the request, by supplying the name, address, route and folio. It is then transmitted by pneumatic tube to the accounting department on the third floor, where the amount of the indebtedness is filled in and returned to the duplicate bill clerk. A teller is assigned to the duplicate bill counter and the customer, upon receiving her duplicate, may pay the amount due without returning to the cashier's cage.

This company issues an average of 268 duplicate bills per day. Duplicate bill requests are time stamped and a summary indicates that the average time taken is four and one-half minutes.

The Dallas Power and Light Company Plan

The Dallas Power and Light Company, Texas, have much the same system as the Baltimore company. They, too, make it possible for the customer to pay her bill at the duplicate bill counter.

For its two branch offices, this company has teletype machines which provide quick transmittal of messages from the branch office to the consumers' accounting division located in its main office. Approximately three per cent of this company's customers request duplicate bills.

Conclusions

That the rendering of duplicate bills is a customer relations problem of considerable importance is obvious. Bills are sometimes lost or misplaced by customers after being received, and not infrequently they fail to reach their destination. Furthermore, when a customer forgets to bring her bill when making payment, she should not be penalized by the utility by subjecting her to unnecessary waiting and reference from one person to another and back again. There is no doubt that this service is best rendered when rendered as quickly as possible and in the most courteous manner.

The emphasis placed on this service by the management has a lot to do with the attitude the employees take regarding it. Close supervision and frequent check-up has produced good results in many companies.

A. E. Fitkin, prominent utility operator, with headquarters in New York, has been named chairman of the board of directors of American Gas and Power Company, and also has been elected a director of the Minneapolis Gas Light Company.

Arthur Simpson, foreman of the Lowell Gas Light Company, Lowell, Mass., has been named to direct the newly-formed personal service department of the company.

M. W. Berg has been made manager of the Holland, Mich., office of the Michigan Gas and Electric Company, filling the vacancy created by the resignation of Walter G. Groth. Mr. Berg was transferred from the general offices of the company in Lansing and Mr. Groth has joined the staff of the Holland Furnace Company.

C. E. Wilson, for the past nine years general sales manager of Worthington Pump and Machinery Corporation, Harrison, N. J., has been appointed vice-president in charge of industrial relations of that company. Clarence E. Searle, general representative in charge of sales of Allis-Chalmers Manufacturing Company for the past seventeen years, has been appointed vice-president in charge of sales.

Why the Gas Industry Is Assured Continued Growth

(Continued from page 100)

the nature that must come to any industry. The program, though not intended for every shift in the wind, still affords flexibility in execution, and the principles of 1926 are the principles of 1932. They may well be the principles of 1936.

There are those who believe that there are today more difficulties in the way of our industry's advancement than at any time in a number of years. Some of this feeling is perhaps due to the mental attitude so general in these days; some of it is doubtless true. We are beset by competition in many forms and very many directions, until any one who in these times refers to the gas industry as a monopoly can provoke only a smile. We can meet competition by maintenance of service, by intelligent engineering, by thorough training and equipment of our representatives, by improvements in appliances, by adequate education of our public, and by adherence to the ideals of public service and social responsibility.

These situations call for the qualities which we possess and which I have attempted to relate—constancy of purpose, stability, adaptability, education, research—and organization.

A. G. A. Supporting Harry C. Abell for U. S. Chamber of Commerce

(Continued from page 104)

memberships in the Chamber be secured.

All public utility executives are urged to secure Mr. Abell's endorsement from the National Councillors representing trade associations and local chambers of commerce with which they have affiliations.

The annual meeting of the Chamber of Commerce of the United States will be held in San Francisco beginning May 18, 1932.

The American Gas Association headquarters, 420 Lexington Avenue, New York City, will appreciate being advised of any endorsements secured for Mr. Abell's re-election.

Plumbers Not Willing Gas Companies Stop Merchandising

(Continued from page 111)

ward spoke that he is the gentleman with whom I have had so much correspondence.

I would like to extend to the officers of the Boston Consolidated Gas Company my sincere thanks for the kindness and the courtesy shown the committee, representing the Master Plumbers Association of Boston and vicinity, when they sat down to talk this matter over with the representatives of the gas company. I am firmly of the opinion that if the same attitude of cooperation is assumed by the officers of other gas companies when meeting with our local committees of Master Plumbers, in the years to come these principles will prove of value not only to the Master Plumbers, but to the gas industry as a whole throughout the country.

We, the representatives of the National Organization of Master Plumbers, are not at all willing that the gas companies should give up the selling of appliances and put them into the hands of men who know nothing whatever about it. We are entirely opposed to that. We believe that the gas company has something at stake; that they will see that they are put in properly, and I don't know what will happen to them if the gas company has its rights removed to sell appliances which they can control.

A. G. A. Affiliated—Mid-West Association

(Continued from page 115)

apolis, Minn., president; W. E. Derwent, Geo. D. Roper Corp., Rockford, Ill., first vice-president; R. L. Klar, Des Moines Gas Company, Des Moines, Iowa, second vice-president.

Executive Council: A. T. Barrett, Chicago, Ill.; Frank Milhollan, Omaha, Neb.; P. J. Montgomery, Grand Forks, N. D.; C. T. Williams, Sioux City, Iowa; E. J. Boyer, Minneapolis, Minn.; F. H. Brooks, Omaha, Neb.; Ira Steele, Des Moines, Iowa; H. E. Littig, Davenport, Iowa.

A. G. A. Pamphlets on Safety Available

Pamphlets giving recommended safe practices for the gas industry, as prepared by a joint committee of the Technical Section and the Accident Prevention Committee of the Association are now available in Lefax size and form on the following subjects:

1. Suggestions for the Safe Operation of a Water Gas Plant.
2. Safe Practices for Installing Gas Appliances.
3. Safe Practices in Transmission, Distribution, Construction and Maintenance Work.
4. Safe Practices for Natural Gas Distribution.
5. Safe Practices in Coke Oven Operation.
6. Safe Practices in Producer Plant Operation.
7. General Plant Safety Rules.

These pamphlets are available at:

2 Cents Per Copy

Orders should be addressed to the Secretary, ACCIDENT PREVENTION COMMITTEE,

**AMERICAN GAS ASSOCIATION
420 Lexington Avenue
New York, N. Y.**

Monthly Summary of Gas Company Statistics

FOR MONTH OF DECEMBER, 1931

Issued February, 1932, by the Statistical Department of the American Gas Association
420 Lexington Avenue, New York, N. Y.

PAUL RYAN, Statistician

COMPARATIVE STATISTICS OF 166 MANUFACTURED GAS COMPANIES FOR THE MONTH OF DECEMBER, 1931

	Month of December			Twelve Months Ending December 31		
	1931	1930	Per cent Increase	1931	1930	Per cent Increase
Customers						
Domestic	8,486,629	8,579,093	— 1.1	See December		
House Heating	45,502	42,275	7.6			
Industrial and Commercial	382,754	366,982	4.3			
Miscellaneous	7,139	6,296	—			
Total	8,922,024	8,994,646	— 0.8			
Gas Sales (MCF)						
Domestic	21,020,218	21,896,896	— 4.0	250,687,155	255,312,119	— 1.8
House Heating	2,166,171	2,511,981	—13.8	16,898,688	15,452,818	9.4
Industrial and Commercial	6,447,791	6,982,992	— 7.7	79,500,647	85,653,789	— 7.2
Miscellaneous	202,892	205,382	—	2,059,964	2,115,351	—
Total	29,837,072	31,597,251	— 5.6	349,146,454	358,534,077	— 2.6
Revenue (Dollars)						
Domestic	23,986,242	25,145,433	— 4.6	289,958,986	296,321,033	— 2.2
House Heating	1,593,666	1,934,777	—17.6	13,100,219	12,439,494	5.3
Industrial and Commercial	5,537,210	6,134,578	— 9.7	68,636,192	73,600,340	— 6.8
Miscellaneous	131,243	143,440	—	1,530,225	1,574,133	—
Total	31,248,361	33,358,228	— 6.3	373,225,622	383,935,000	— 2.8
Gas Produced and Purchased (MCF)						
Gas Produced						
(a) Water Gas	14,133,847	17,996,950	—21.5	167,405,629	182,129,068	— 8.1
(b) Retort Coal Gas	2,647,231	2,778,840	— 4.7	31,546,752	32,175,472	— 2.0
(c) Oil Gas	872,449	862,594	1.1	7,674,653	8,120,596	— 5.5
(d) Coke Oven Gas	4,388,291	4,392,478	— 0.1	52,312,827	48,640,015	7.6
(e) Reformed Oil Still Gas	420,354	308,805	36.1	4,478,490	2,204,758	103.1
(f) Total Gas Produced	22,462,172	26,339,667	—14.7	263,418,351	273,269,909	— 3.6
Gas Purchased						
(a) Coke Oven Gas	8,609,022	9,959,681	—13.6	102,773,607	111,068,992	— 7.5
(b) Oil Still and Natural Gas	2,957,796	285,334	—	10,802,728	3,201,370	—
(c) Total Gas Purchased	11,566,818	10,245,015	12.9	113,576,335	114,270,362	— 0.6
Total Gas Produced and Purchased	34,028,990	36,584,682	— 7.0	376,994,686	387,540,271	— 2.7

COMPARATIVE STATISTICS OF 161 NATURAL GAS COMPANIES FOR THE MONTH OF DECEMBER, 1931

Domestic (Including House Heating)	4,429,107	4,445,462	— 0.4	See December		
Commercial	222,460	216,882	2.6			
Industrial	17,178	15,781	8.9			
Main Line Industrial	5,661	4,654	21.6			
Miscellaneous	1,853	2,865	—			
Total	4,676,259	4,685,644	— 0.2			
Gas Sales (MCF)						
Domestic (Including House Heating)	30,443,785	33,483,770	— 9.1	275,736,752	288,457,178	— 4.4
Commercial	4,808,522	5,152,342	— 6.7	41,010,797	40,279,320	1.8
Industrial	16,231,835	17,760,605	— 8.6	202,957,869	230,830,346	—12.1
Main Line Industrial	12,322,151	13,233,924	— 6.9	151,449,804	177,801,024	—14.8
Miscellaneous	897,736	473,613	—	7,278,615	7,809,354	—
Total	64,704,029	70,104,254	— 7.7	678,433,837	745,177,202	— 9.0
Revenue (Dollars)						
Domestic (Including House Heating)	20,487,566	21,976,311	— 6.8	190,463,784	197,750,217	— 3.7
Commercial	2,148,586	2,418,125	—11.2	20,150,745	20,558,154	— 2.0
Industrial	3,461,508	4,256,266	—18.7	45,009,399	55,510,464	—18.9
Main Line Industrial	1,531,994	1,726,938	—11.3	19,198,594	22,906,110	—16.2
Miscellaneous	91,365	109,990	—	971,628	1,693,258	—
Total	27,721,019	30,487,630	— 9.1	275,794,150	298,418,203	— 7.6

Gas Utility Revenues Drop 5 Per Cent in 1931

REVENUES of manufactured and natural gas utilities aggregated \$649,019,772 during 1931, as compared with \$682,353,203 during the preceding year, a decline of 5 per cent, according to reports from companies representing nearly 90 per cent of the utility distribution of manufactured and natural gas.

The manufactured gas companies reported revenues of \$373,225,622 for the year, a drop of 2.8 per cent from a year ago, while revenues of the natural gas concerns totaled \$275,794,150 or approximately 8 per cent less than for the year 1930.

Sales of manufactured gas reported for 1931 totaled 349,146,454,000 cu.ft., a decline of 2.6 per cent, while natural gas sales for the year were 678,433,837,000 cu.ft., a drop of 9 per cent. Natural gas sales for industrial purposes declined from 230,830,346,000 cu.ft. in 1930 to 202,957,869,000 cu.ft. in 1931, a drop of approximately 12 per cent.

869,000 cu.ft. in 1931, a drop of approximately 12 per cent.

For comparison with other fuels, the production of bituminous coal during 1931 declined by nearly 18 per cent from the preceding year, anthracite coal production dropped more than 15 per cent, crude petroleum output was down 5 per cent, coke production down nearly 30 per cent, while the production of electric power declined by 4 per cent.

These economic adjustments characterizing most of the basic fuel industries were reflected in the production policies of the manufactured gas companies during 1931. The declining trend in the production of water gas continued, output averaging more than 8 per cent under the previous year. While the quantities of coke oven gas produced in plants owned by gas utilities increased by nearly 8 per cent, rising from 48,640,015,000 cu.ft. in

1930 to 52,312,827,000 cu.ft. in 1931, the volume of coke oven gas purchased from sources outside the industry, such as merchant coke and steel companies, fell from 111,068,992,000 cu.ft. in 1930 to 102,773,607,000 cu.ft. in 1931, a decline of 7.5 per cent.

A significant feature of natural gas utilization is indicated by the fact that while the total production of electric power during 1931 declined by 4 per cent from the previous year, the use of natural gas for the generation of electric power revealed a marked increase. Consumption of all other fuels by the electric industry decreased considerably during the year, and the production of hydroelectric energy dropped 7 per cent, but the use of natural gas by electric utilities during 1931 increased 15 per cent as compared with the previous year.

Oklahoma Gas Course Announced

THE eighth annual Southwestern Gas Measurement Short Course will be held at the College of Engineering, University of Oklahoma, Norman, Oklahoma, April 26 to 28, 1932. These dates were announced by W. H. Carson, professor of mechanical engineering at the university and director of the course. This course is sponsored by the College of Engineering, of which J. H. Felgar is dean, assisted by the Oklahoma Utilities Association and the Corporation Commission of Oklahoma.

At a meeting of the general committee in charge of this project, of which B. L. Maulsby of the Oklahoma Natural Gas Corporation is chairman, preliminary details of the project were worked out. W. R. McLaughlin of the Arkansas Natural Gas Corporation, Shreveport, La., is chairman of the Program Committee; R. D. Turner, Skelly Oil Company, Tulsa, chairman of the Practical Methods Committee; G. P. Estill, Oklahoma Natural Gas Corporation, Tulsa, chairman of the Committee on Publication of Papers, and D. C. Williams, Kay County Gas Company, Ponca City, chairman of Committee on Exhibits.

Registration for the course in 1931 reached about 400 representing twenty states. The program for the course this year, which will be announced in the near future, is expected to be as comprehensive as any heretofore offered.

A Modern Window Display



Here is shown a modern window display installed recently by the Consolidated Gas Company. It is reported to have helped swell water heater sales

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420 LEXINGTON AVENUE
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Fourteenth Annual Convention of the American Gas Association
Atlantic City, N. J. - - - October 10-14, 1932

Personnel Service

SERVICES OFFERED

Accountant and typist (30) college education, with five years' experience in various phases of gas industry. Two and one-half years' experience as chief clerk in general offices of a gas company. Location immaterial. 512.

New business manager (31) with one of the largest public utilities supplying natural gas for domestic and industrial purposes, desires position, preferably natural gas. Six years' experience designing and selecting industrial high- and low-pressure equipment; considerable experience general management public utility natural gas properties. Proven sales and load building record. 513.

Engineering or superintendence service with a gas utility corporation is offered by a graduate engineer with 21 years of engineering experience, 12 years of which were in the gas industry, including manufacture, distribution—local and long distance—and utilization. Location immaterial, should position have opportunities for advancement. Age 44, married, member A. S. C. E., A. G. A., and New York Professional Engineer's License. 514.

Engineering executive with twenty years of unusually broad technical and practical experience in the management, operation, financial and public relations problems of gas companies, and with especial training in rate development, desires either a permanent connection or a temporary opportunity to handle special problems. 516.

Executive-engineer (39) many years' experience in electric, gas and water utilities having served in field and office in construction, engineering, operation and commercial work. A capable organizer qualified to take full charge of property or of engineering and construction department. 518.

Manager (Natural Gas) with more than twenty-two years of natural gas distribution experience, thoroughly familiar with all the phases of the natural gas business from well to consumer; plant construction operation and maintenance. Trained in office management and accounting. Familiar with rate making and reports. 519.

Service manager or supervisor. Seven years' experience in appliance service training and special service problems. Have done house heating sales work including figuring the estimate and following up the installations; have supervised electric appliance service and done considerable gas and electric research work. Prefer Middle-West. 520.

Experienced manager or executive with initiative to accept some of your responsibilities. Eighteen years as manager supervising sales, high- and low-pressure transmission distribution, manufacture, construction and public relations. Economical and conservative operator of single or group properties. Can take charge, think your way and work without supervision. Open for any position leading to advancement in executive capacity. Will go anywhere. 521.

Manager or superintendent of manufacture with a number of years' experience in the manufacturing of both coal and water gas, high- and low-pressure distribution, new business, domestic and industrial appliance sales, desires position as manager of small property or superintendent of plant. 522.

Executive mechanical engineer, (31) university graduate, single. Nine years in the oil burning industry along engineering lines particularly the installation and servicing of equipment throughout the country. Also experienced in the manufacture of large machinery and power plant testing. 523.

Sales executive, well known to the gas industry, thoroughly familiar with all appliance manufacture, distribution and sales, and specialist in water heating and refrigeration field; particularly interested in dealer co-operation and well acquainted with plumbing industry. Has national experience and viewpoint qualifying for responsible position with gas company or manufacturer. 524.

SERVICES OFFERED

Sales supervisor, with an excellent record during 1931 for automatic water heater sales, desires new connection. Capable of promoting domestic, industrial and house heating sales. Thoroughly experienced in natural gas change-over work. 525.

Manager (Cornell Graduate) (32) at present employed, desires responsible position with gas company. Ten years' experience covers manufacture, distribution, merchandising and office work. Excellent record. 526.

Sales, budget and market analysis experience for ten years, with one of the largest utilities in the world; operating budgets prepared and forecasts made of company business. Sales engineering for analysis of markets and preparation of marketing programs. Statistical and accounting analyses and forecasts of sales, revenues, expenses, profits, and business conditions. 527.

Manufacturers' representative recently with large water heater company, acquainted with large utilities activities in field and sales promotion work. 528.

Gas engineer, (32) technical graduate, (B.S.) with eleven years' practical experience. Capable of managing and organizing. Thoroughly experienced in coal and water gas manufacture, high- and low-pressure distribution, also sales and office work. Opportunity to demonstrate ability primary to salary. Desire a position with a real company with a real future as engineer or manager. 529.

College trained man, (32) with good background of newspaper and public utility experience seeks connection as **public relations,** advertising, sales or merchandising manager or assistant. Have excellent experience in franchise and rate matters before city councils and public utility commissions. Can serve as confidential representative. Reliable, trustworthy. Modest compensation. 530.

Engineering and business school graduate with experience with combination company in preparing sales, expense and merchandise budgets, statistical analysis, planning and outlining new business and commercial operating methods, executive assistant, and superintendent of operating district in charge of commercial, new business, and operating functions. Married, (29). 531.

Man of executive type desires connection with gas company in **management,** operating or distribution capacity. University engineering graduate, (33). Nine years' experience as field manager and superintendent of large firm supplying gas manufacturing equipment to the gas industry. Experience includes engineering, supervision and accounting. 532.

Experienced house heating sales engineer with knowledge of gas unit heating, boiler sales and service, gas steam radiators, gas storage water heaters, warm air furnaces and air conditioning equipment, desires permanent connection with reliable firm in natural gas territory. Technical graduate. Married. 533.

Experienced man on gas house heating sales. Five years' experience with utilities and manufacturers calling on architects, heating trade, building contractors and home owners; also commercial and industrial gas application experience. 534.

Recent college graduate, general business course, with sales and mechanical experience. Has canvassed builders, architects and home owners. 535.

Industrial sales engineer, thoroughly experienced in surveys, laboratory development, design, application and operation of gas and oil burning equipment and furnaces. Formerly connected with the two most prominent concerns in this field. Successful consultant and cooperator with public utility engineers in all industrial problems. Has also specialized in house heating. 536.

POSITIONS OPEN

One of the oldest and leading burner manufacturers has a number of territories open for progressive and efficient manufacturers' agents. In replying to this advertisement, kindly state territory and products which you are now selling. 0234.

Manufacturer approved gas boiler has openings in limited territory for salesmen, commission basis. 0235.

TELL US ABOUT THAT VACANCY!

We want to hear about every vacancy in the gas industry so that we may do our share toward furnishing you, upon request, lists of experienced and competent personnel from which selections may be made. We want to advertise openings wherever possible so that they may be read by the thousands of gas men who regularly receive this publication.

We offer you first, the confidential classification records of men in all branches of the industry. The information furnished on these sheets is singularly complete; it is concise, easily read and serves to present a very clear picture of the personal, educational and professional qualifications of the individual described therein, together with a chronological arrangement of his actual experience.

Next we invite your attention to this advertising page which appears every month. The advertisements are keyed and all correspondence relating thereto is handled in confidence and with discretion.

A single advertisement under *Positions Open* will normally bring in answers from all parts of the country, from men in every type of organization, and selection of the right man is readily made. Under no consideration is the name of a *Positions Open* advertiser ever revealed to inquirers.

Personnel Service is at your service as both a clearing house and a placement organization. Let us do the preliminary liaison work when you are in the market for additional personnel; advertisements for "help wanted" these days are good for the morale of both the individual and the industry alike.

February 24, 1932.

"I was very glad to read the admirable insertion on the 'Personnel Service' page in the February issue of the bulletin entitled 'Tell Us About That Vacancy.' It is very timely and should prove fruitfully beneficial." *Extract from a letter from New England.*

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